Rhode Island Asthma Control Program

Strategic Evaluation Plan for 2019-2024

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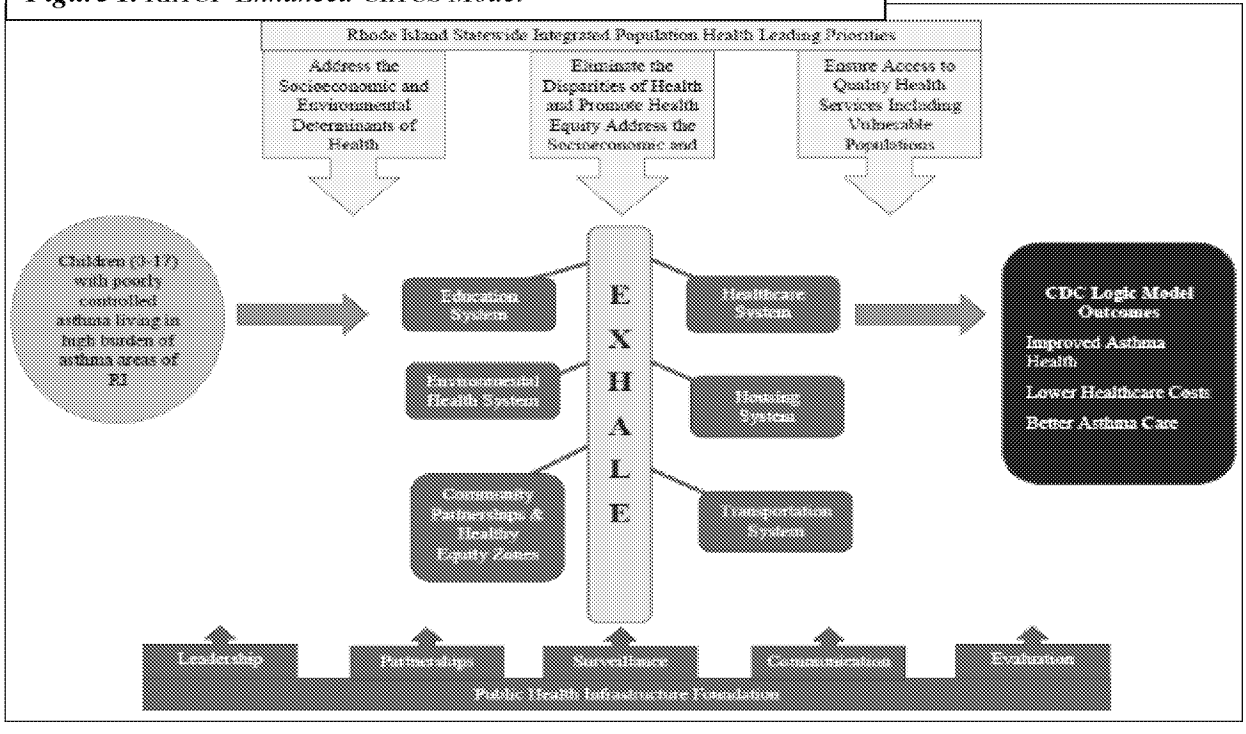
1. Program Background and Purpose of Strategic Evaluation Plan

Program Background. The Rhode Island Asthma Control Program (RIACP) is an award-winning state asthma program at the Rhode Island Department of Health (RIDOH), Division of Community Health and Equity, recipient of the Environmental Protection Agency (EPA) 2019 National *Environmental Leadership in Asthma Management* award. In the 20 years since first receiving CDC funding in 1999, RIACP has worked with partners statewide to build a strong foundation of public health infrastructure to improve pediatric asthma outcomes. In 2015, RIACP developed the *Comprehensive Integrated Asthma Care System* (CIACS) model to link public health and healthcare systems and have a framework to coordinate interventions across interconnected systems such as health care, housing, education, transportation, environmental health, and community. The enhanced CIACS model provides an expanded conceptual framework to address the social, environmental and healthcare interventions needed to improve asthma outcomes and lower costs. A strength of this framework is that it focuses on linkages across systems to achieve reductions in asthma disparities. Translating this model into practice requires strong evaluation infrastructure and ongoing stakeholder engagement.

Figure 1. *RIACP Enhanced CIACS Model*



During the 2019-2024 funding cycle, RIACP will use an enhanced version of CIACS (Figure 1) that integrates RIDOH's statewide integrated population health Leading Priorities in RI to: 1) address the socioeconomic and environmental determinants of health; 2) eliminate the disparities of health and promote health equity; 3) ensure access to quality health services for Rhode Islanders including vulnerable populations; and 4) implement and evaluate EXHALE strategies to achieve CCARE outcomes. The enhanced CIACS model is designed to decrease asthma emergency department (ED) visits and hospitalizations in minority and low-income children living in RI's four high poverty urban cities where the asthma burden is highest.

Over the next five years, RIACP will expand the current robust public health infrastructure established over the past 20 years. Guided by the enhanced CIACS conceptual model and a new Strategic Plan, RIACP will

align asthma strategies within RIDOH's statewide health equity strategic framework, leverage and coordinate cross-sector partnerships, address the social and environmental determinants of asthma, and work to integrate the EXHALE strategies and other evidence-based public health asthma interventions into the health care system. RIACP will ensure quality, efficiency, effectiveness and equity in achieving outcomes of improved health, lower costs, and overall better coordinated care for asthma in RI.

Logic Model. RIACP will align with and adopt CDC's logic model, and work to achieve all eleven outcomes by the end of the project period. **Short-term** outcomes include: 1) expanded capacity to deliver/refer people with asthma to AS-ME; 2) expanded access, referral to and delivery of coordinated services in high burden areas; 3) improved systems to promote guidelines-based medical management; 4) improved systems that promote team-based asthma care; 5) use of data (surveillance and evaluation) for program improvement. RIACP will achieve the following **intermediate outcomes**: 6) more people with asthma receive appropriate medical assessments, essential medications and devices; 7) more people and caregivers adhering to prescribed medications and control practices; 8) increased coverage of services, essential medications, ns devices by state Medicaid and commercial plans; 9) increased adoption and implementation of asthma friendly environmental policies/best practices; 10)established linkages and coordination across public health and health care systems. RIACP will achieve the following **long-term** outcomes: 11) more people have well-controlled asthma, fewer asthma attacks, and fewer missed school or workdays; and 12) fewer asthma-related ED visits, hospitalizations, and deaths. By 2024, RIACP expects to achieve: improved health and quality of life with more people having well controlled asthma; lower costs of care; and better care with widespread use of comprehensive asthma control services resulting in reduced asthma disparities.

Purpose of Plan. Evaluation data gathered will inform decision-making and build evidence to support business cases for asthma services. The comprehensive evaluation system will be used to assess the quality of asthma control services and monitor progress on the Strategic Plan and the outcomes listed in the logic model. The activities that will be evaluated over the funding period all relate to the four overarching evaluation questions:

> *Question 1. To what extent has Rhode Island strengthened and expanded programmatic infrastructure to support optimizing services and health systems?*
>
> *Question 2. To what extent has Rhode Island leveraged partnerships and policies to expand the EXHALE strategies to ensure availability, efficiency, effectiveness, and health equity?*
>
> *Question 3. To what extent has Rhode Island successfully engaged health plans or health care practices in efforts to improve quality of care?*
>
> *Question 4. To what extent has Rhode Island made progress toward achieving long-term outcomes, including reduction of asthma disparities?*

Please refer to the Evaluation Profile Tables for a more in-depth description of specific evaluation activities and their relation to the overarching evaluation questions and relevant EXHALE strategies.

Each activity in the Strategic Evaluation Plan contributes to the CDC's CCARE (Controlling Childhood Asthma Reducing Emergencies) aspirational goal of preventing 500,000 asthma-related hospitalizations and ED visits among children as the activities in this plan are focused on reducing health disparities and improving quality of life statewide.

The SEP is designed to be a working document and will be updated over the next five years, as various factors can influence RIACP's abilities to conduct evaluations, and additionally, evaluation priorities may change over time. The Strategic Evaluation Plan will used by RIACP, evaluation stakeholders to guide the planning of the Strategic Plan and the program candidates that will be evaluated during the funding period.

Both the Strategic Evaluation Plan and Data Management Plan follow the same evaluation framework and are aligned with the CDC's overarching evaluation questions. Both plans follow the same process and outcome evaluation questions and use the CDC's performance measures.

2. Methods for Developing the Strategic Evaluation Plan

Rhode Island Strategic Plan. The SEP will be aligned with Rhode Island's Asthma Strategic Plan. The Strategic Plan will describe the burden of asthma and availability of comprehensive asthma control services across the state but will focus on the pediatric Medicaid population within areas of RI that are disproportionately impacted by asthma, including the Greater Providence area, and the cities of Newport and Woonsocket. Both the Strategic Plan and Strategic Evaluation Plan will use robust evaluation and performance measurement framework. Data will come from the RI Asthma Surveillance System and external partners to monitor and track progress on the goals and objectives and provide annual updates for partners and departmental leadership.

Guided by the enhanced CIACS conceptual model and development of a new Strategic Plan, RIACP will align asthma strategies with RIDOH's statewide health equity strategic framework, leverage and coordinate cross-sector partnerships, address the social and environmental determinants of asthma, and work to integrate the EXHALE strategies and other evidence-based public health asthma interventions into the health care system. RIACP will ensure quality, efficiency, effectiveness and equity in achieving outcomes of improved health, lower costs, and overall better coordinated care for asthma in the state.
Stakeholders. The work group will be comprised of RIACP staff and members of the RI Asthma Strategic Planning Committee. Membership will not be limited to stakeholders with evaluation expertise. Capacity building will be built in to the process. The evaluation workgroup will be a learning community that works together to 1. develop and implement individual and strategic evaluation plans; 2. identify audiences and potential uses of evaluation findings, and 3. seek feedback on changes for continuous program improvement. Continuous quality improvement will be guided by the Plan-Do-Check-Act (PDCA) model, a four-step model for carrying out change that will help RIACP and evaluation workgroup members to identify any problems and provide guidance on solutions. **Plan**: Development of EXHALE strategies and evaluation plans; **Do**: Implementation of EXHALE strategies and collection of process and outcome data; **Check**: review evaluation data and discuss effectiveness and efficiency of EXHALE strategies with evaluation workgroup and EXHALE partners; **Act**: modify intervention delivery, reach, or dose as needed in collaboration with EXHALE partners and evaluation workgroup; develop additional plans as needed to create a continuous QI loop.

The evaluation workgroup will support the collection of evaluation data, review findings for process and outcome evaluations, and provide feedback on success in accomplishing objectives (effectiveness) and how to improve the delivery of EXHALE strategies (efficiency). The 2019-2024 SEP will provide a blueprint for evaluating policies and programs within and across systems. Notable strengths of the proposed SEP are 1. RIACP's previous experience developing an SEP with stakeholder engagement, 2. the dynamic conceptual CIACS model, and 3. the multi-faceted approach to evaluate strategies statewide, at the municipal level in Central Falls and Providence, and at the neighborhood level with HEZ collaboratives. RIACP will use a non-experimental evaluation design for process evaluation and a quasi-experimental design to assess the effect of state, municipal and neighborhood level strategies on asthma outcomes shown in the workplan and logic model. Data come from the RI Asthma Surveillance System.

Table 1. Evaluation Planning Team – Contributions, Roles and Future Involvement

Stakeholder Name	Title and Affiliation	Contribution to Evaluation Planning	Role in Implementing Evaluations
Ashley Fogarty	RIACP Programming Services Officer	Develop and review evaluation plan	Implement SEP and analyze results
Julian Drix	RIACP Program Manager	Provide guidance and review evaluation plan	Implement SEP and analyze results
Deborah Pearlman	Epidemiologist/Evaluator	Provide guidance and review evaluation plan	Implement SEP and analyze results
Elizabeth McQuaid	Researcher	Review evaluation plan	Provide feedback on SEP
June Tourangeau	Provider	Review evaluation plan	Provide feedback on SEP
Ty-Eisha Rivera	Provider	Review evaluation plan	Provide feedback on SEP

Methods Used to Develop the Strategic Evaluation Plan. Staff from the RI Asthma Control Program have partnered with the CIACS Advisory Group to formulate the initial draft of the Strategic Evaluation Plan for activities for 2019-2024. The SEP planning team contains diverse perspectives on various asthma-related topics and evaluation approaches as the planning team includes RIACP program staff, a public health epidemiologist and researcher from Brown University, health care provider, and a community health worker. During the initial SEP planning meeting with these stakeholders, they were asked a series of questions regarding the development of the SEP, including:

1. *Are there any other stakeholders who should be involved in the SEP planning process?*
2. *In addition to the CDC overarching evaluation questions, what other evaluation questions should be included in the SEP?*
3. *How would you prioritize each of the overarching evaluation questions based on level of importance?*
4. *Do you have any suggestions for data sources that can be used to answer each of the overarching questions?*

The stakeholders responded to the questions and suggested that the RIACP evaluation activities include perspectives and feedback from the diverse groups as different partners may have very different investments and interests with asthma. Another suggestion from the initial SEP planning meeting was to sort evaluation stakeholders and to ask specific theme-based evaluation questions to specific stakeholder groups. Stakeholders from the initial SEP planning meeting also suggested organizing questions and partner perspectives into the themes above (Housing, Healthcare, Education & Schools, and Air Quality, Climate, Transportation).

Additional feedback from evaluation planning stakeholders included that RIACP provide substantial background information about the purpose of the Strategic Plan as well as the CDC CCARE goals and EXHALE initiatives to ensure that other stakeholders fully understand the scope of the goals that RIACP is working to achieve over the next five years. Below is a list of sorted groups of partners that the CIACS Advisory Group suggested RIACP consider in strategic evaluation activities:

Table 2. Strategic Evaluation Partners by Strategic Plan Theme

Strategic Planning Theme	Partners
Housing	Housing providers
	Advocates
	Public housing
	Code enforcement
	RI Alliance for Healthy Homes
	Green and Healthy Homes Initiative
	City of Providence
	Lead Centers
	Family Home Visiting
	RI Housing
	Center for Justice
	Medical Legal Partnership
Healthcare	Payers
	Providers
	Consumers/patients
	Smoking cessation
Education & Schools	School Nurse Teachers
	Asthma educators
	Teachers
	Facilities managers
	Students/parents
	School administrators
Air Quality, Climate, Transportation	RI Department of Environmental Management
	RI Department of Transportation
	RI Public Transit Authority
	Advocates
	Community groups
	Transportation advocates

The stakeholders also suggested that RIACP focus on the following overarching evaluation questions:

> *Question 1. To what extent has the recipient strengthened and expanded programmatic infrastructure to support optimizing services and health systems?*
>
> *Question 3. To what extent has Rhode Island successfully engaged health plans or health care practices in efforts to improve quality of care?*

Table 3. Prioritization Criteria

Criteria Used	Definition
Maturity	The overarching evaluation questions correspond to activities that have been evaluated during previous funding periods and will be conducted and evaluated over the current (5 year) cooperative agreement. RIACP's asthma initiatives including HARP, BEAH, and CASE have formal data collection instruments and data entry systems and have established stakeholder advisory groups. The remaining activities related to the other overarching evaluation questions will also be evaluated during the current funding period and RIACP will ensure that data collection instruments and systems will be established.
Stakeholder interest	RIACP has established stakeholder groups based on focus areas of interest and place including: Health care; Housing; Education; Air Quality, Climate & Transportation. Stakeholders will also be organized into place-based groups including those who work and live in the Greater Providence area (Providence, Pawtucket, Central Falls); Woonsocket; Newport; and West Warwick. From previous CDC-funded periods, RIACP has already established two major groups of stakeholders, including the CIACS and Breathe Easy at Home advisory groups.
Sustainability	The interventions related to the overarching evaluation questions have a high likelihood of being sustained beyond grant funding.
Centrality	The activities connected to the overarching evaluation questions, CCARE goals, and EXHALE strategies are aligned with other asthma initiatives being conducted by external asthma partners across RI
Plausible outcomes	Each activity has measurable outcomes that are expected to be met at the end of grant funding.
Disparities	Each activity is designed to reduce asthma disparities.
Focus	The interventions corresponding to the overarching evaluation questions, CCARE goals, and EXHALE strategies affect those who are most burdened by asthma.
Reach	The interventions corresponding to the overarching evaluation questions, CCARE goals, and EXHALE strategies have the potential to be available state-wide.
Improvements	Evaluation findings for each intervention are expected to result in recommendations for programmatic improvement.
Use	Results and/or recommendations from evaluation findings will be used by stakeholders implementing RIACP interventions such as HARP and BEAH and those involved in housing, education, healthcare, and/or air quality, climate & transportation areas of focus for asthma-related interventions pertaining to these themes.

3. Proposed Priority Evaluations

Table 4 below provides a series of evaluation candidates that RIACP is considering including in program evaluation activities. Since this is a draft Strategic Evaluation Plan, please note that some of these evaluation candidates will not be evaluated during the funding period, and other activities may take their place due to level of importance and other factors. The Strategic Evaluation Plan will be updated on a quarterly process to reflect changes, especially involving prioritization of evaluation efforts and the CDC will be notified of these adjustments.

Table 4. List of Priority Evaluation Candidates

Enhancement of Infrastructure	Expansion of EXHALE
• Partnership evaluation	• Evaluation of home visiting interventions
• Evaluation of surveillance data	• Health systems and guidelines-based care evaluation
• Evaluation of evidence-based services in RI	• Indoor/outdoor policy promotion evaluation
• Communications evaluation	• Evaluation of AS-ME expansion

Table 5. Sample Timeline with Sequencing of Proposed Evaluation Activities

	Year 1	Year 2	Year 3	Year 4	Year 5
Program Milestones	Draft SEP	Develop Strategic Plan	Strengthen health systems to support guidelines-based care		
	Strategic Planning Launch	Promote asthma home visiting			
	Prioritization Process	Revise SEP according to Strategic Plan	Promote asthma-friendly policies		
Evaluations	Partnership evaluation			Asthma-friendly policies evaluation	Outcomes evaluation

Note: The timeline for sequencing proposed evaluation activities is a draft and will be updated throughout the five-year cooperative agreement. In particular, the development of the Asthma Strategic Plan will result in adjustments to the timeline and proposed evaluation activities

The following evaluation profiles (Table 6) provide a series of evaluation profiles for each of the eight potential evaluation candidates listed above. As noted in previous sections, this SEP is a draft and prioritization of evaluation activities will be adjusted throughout the funding period. The CDC will be notified by RIACP with any adjustments to the SEP.

Table 6. Evaluation Profiles

Activity Name	Partnership evaluation
Program Component	Infrastructure
Strategic Plan Theme	Healthcare, Housing, Education & Schools, Air Quality, Climate & Transportation
Evaluation Justification	Engaging partners to develop, evaluate and sustain asthma interventions, especially evidence-based HARP asthma home visiting intervention is a highly prioritized candidate for evaluation as it relates to the CDC's CCARE goals and various EXHALE strategies.
Evaluation Purpose and Use	Evaluation of partnerships will provide further evidence of the benefits of sustaining initiatives to reduce the burden of asthma in the state.
Evaluation Questions	**Process evaluation questions:** Were the strategies to initiate partnerships implemented as intended, if not, were changes made? What were the challenges encountered to expand program infrastructure? What were the challenges encountered to leverage partnerships for EXHALE strategies? What were the challenges encountered to engage partners (health plans, practices, etc.) to improve quality of care and reduce asthma disparities? Outcome evaluation questions: Was access, referral to, and delivery of asthma services expanded through partnership engagement? Were asthma interventions sustained over time?
Relevant Performance Measures	B, C, D, E
Relevant EXHALE Component	**H**ome visits for trigger reduction & AS-ME; **A**chievement of guidelines-based medical management; **L**inkages and coordination of care
Relevant Overarching Evaluation Question	To what extent has RIACP leveraged partnerships and policies to expand the EXHALE strategies to ensure availability, efficiency, effectiveness, and health equity?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual factors:** Partners funded through RIDOH vs. others who have other funding sources; professional organizations with staff VS. organizations with volunteers or community-based organizations focused on advocacy. **Cultural factors:** The extent to which people or groups experience/understand structural racism as it relates to asthma.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, payers, federally qualified health centers, private health care practices
Possible Uses of Information	To expand access to and sustain asthma interventions across RI.

Activity Name	Evaluation of surveillance data
Program Component	Infrastructure
Strategic Planning Theme	Healthcare, Housing, Education & Schools, Air Quality, Climate & Transportation
Evaluation Justification	Using data to guide strategic actions to reduce the burden of asthma in RI.
Evaluation Purpose and Use	Evaluating the use of data will allow RIACP to identify specific areas where the burden of asthma is the highest and where to target programming.
Evaluation Questions	***Process evaluation questions:*** Were the strategies implemented as intended, if not, what changes were made? Did the use of data expand the reach of services across RI? ***Outcome evaluation question:*** Did the use of data improve asthma programs?
Relevant Performance Measures	A, E
Relevant EXHALE Component	Achievement of guidelines-based medical management
Relevant Overarching Evaluation Question	To what extent has the recipient made progress toward achieving the long-term outcomes, including reduction of asthma disparities?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual factors:** Different types of data sources such as Medicaid claims data vs. self-reported data
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	To target the areas of the state where the burden of asthma is the highest and to expand access to and sustain asthma interventions across RI.

Activity Name	Evaluation of evidence-based services across RI
Program Component	Services
Strategic Planning Theme	Healthcare
Evaluation Justification	Expanding and promoting evidence-based services and asthma interventions will reduce the burden of asthma in the state and aligns with the CDC's CCARE goals.
Evaluation Purpose and Use	Evaluating the expansion and promotion of services and interventions will allow RIACP to reach populations where the asthma burden is the highest and reduce health disparities.
Evaluation Questions	***Process evaluation questions:*** What were the challenges encountered to strengthen and expand program infrastructure? Did the challenges vary based on the type of strategy or if the strategy was implemented statewide, municipal or neighborhood levels? ***Outcome evaluation question:*** Did the magnitude of effect differ by type of strategy and reach?
Relevant Performance Measures	B, C, D, E, F, G
Relevant EXHALE Component	**E**ducation on asthma self-management; **H**ome visits for trigger reduction & AS-ME; **A**chievement of guidelines-based medical management; **L**inkages & coordination of care
Relevant Overarching Evaluation Question	To what extent has the recipient strengthened and expanded programmatic infrastructure to support optimizing services and health systems?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Cultural Factors:** RIACP will account for cultural factors by tailoring evidence-based interventions to meet needs of diverse populations.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	To expand access to and sustain asthma interventions across RI.

Activity Name	Communications evaluation
Program Component	Services
Strategic Planning Theme	Healthcare, Education & Schools
Evaluation Justification	Conducting communication activities about asthma for people with asthma and their caregivers is essential to ensure that they are provided with consistent and accurate knowledge. Additionally, promoting asthma self-management education will reduce asthma disparities and improve quality of care.
Evaluation Purpose and Use	Evaluating asthma communication activities will provide RIACP with a better understanding of how to reach the populations most affected by the burden of asthma and will ultimately improve health outcomes.
Evaluation Questions	***Process evaluation questions:*** Were the strategies to conduct asthma communication activities implemented as intended, if not, what changes were made? What were the challenges encountered to conduct asthma communications for people with asthma and their caregivers? ***Outcome evaluation question:*** To what extent can the short-, intermediate-, and long-term outcomes be attributed to the programmatic strategy of conducting communications activities about asthma to Rhode Islanders with asthma and their caregivers?
Relevant Performance Measures	B, C, D, E, F,G
Relevant EXHALE Component	**E**ducation on asthma-self management; **A**chievement of guidelines-based medical management; **L**inkages & coordination of care
Relevant Overarching Evaluation Question	To what extent has RIACP made progress toward achieving the long-term outcomes, including reduction of asthma disparities?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	Cultural Factors: RIACP will account for diverse populations when delivering communication activities related to asthma.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	To expand access to and sustain asthma interventions across RI.

Activity Name	Evaluation of home visiting interventions
Program Component	Services
Strategic Planning Theme	Healthcare
Evaluation Justification	Expanding asthma home visiting statewide will assist in reducing the burden of asthma and aligns with the CCARE goals and EXHALE strategies.
Evaluation Purpose and Use	Evaluating asthma home visiting services in RI will allow RIACP to identify inconsistencies across various asthma home visiting interventions throughout the state and will ensure that accurate and consistent information on asthma self-management education and healthy housing are provided to people with asthma and their caregivers.
Evaluation Questions	***Process evaluation questions:*** Were asthma home visiting interventions implemented as intended, if not, what changes were made? What were the challenges encountered to expand asthma home visiting services throughout the state? ***Outcome evaluation question:*** To what extent can short-, intermediate-, and long-term outcomes be attributed to programmatic and policy strategies?
Relevant Performance Measures	B, C, D, E, F, G
Relevant EXHALE Component	**H**ome visits for trigger reduction & AS-ME
Relevant Overarching Evaluation Question	To what extent has RIACP strengthened and expanded programmatic infrastructure to support optimizing services and health systems?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual Factors:** RIACP will take into account different types of partners (healthcare VS. community-based organizations when promoting the adoption of home-based asthma services. **Cultural Factors:** RIACP will take into account diverse populations and ways of living when promoting asthma home visiting programs statewide.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	To expand and sustain evidence-based asthma home visiting interventions across Rhode Island.

Activity Name	Health systems and guidelines-based care evaluation
Program Component	Systems
Strategic Planning Theme	Healthcare
Evaluation Justification	Strengthening healthcare systems to support improving guidelines-based medical care aligns with CCARE goals and EXHALE strategies to ultimately improve health, lower health care costs and provide better care to people with asthma.
Evaluation Purpose and Use	Evaluation of this activity will allow RIACP to identify weak areas across health systems and various quality improvement strategies to increase guidelines-based medical care.
Evaluation Questions	***Process evaluation questions:*** Were the strategies to strengthen health systems implemented as intended, if not, were changes made? Were the strategies to improve guidelines-based medical care implemented as intended, if not, were changes made? What were the challenges encountered to strengthen health systems? What were the challenges encountered to improve guidelines-based medical care? ***Outcome evaluation question:*** To what extent can short-, intermediate-, and long-term outcomes be attributed to programmatic and policy strategies?
Relevant Performance Measures	B, C, D, E
Relevant EXHALE Component	**A**chievement of guidelines-based medical management; **L**inkages & coordination of care
Relevant Overarching Evaluation Question	To what extent has RIACP strengthened and expanded programmatic infrastructure to support optimizing health services and health systems?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual Factors:** RIACP will take different insurance coverage plans and cost of medications (Medicaid VS. Commercial) into account when supporting guidelines-based medical management for patients with asthma.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	To ensure that more people have well-controlled asthma, improved quality of life, and less asthma-related ED visits and hospitalizations.

Activity Name	Indoor/outdoor policy promotion evaluation
Program Component	Infrastructure
Strategic Planning Theme	Air Quality, Climate & Transportation
Evaluation Justification	Promoting policies to reduce indoor/outdoor asthma triggers will assist in reducing the overall burden of asthma in the state.
Evaluation Purpose and Use	Evaluating policies to reduce indoor/outdoor asthma triggers will identify areas related to air quality and the indoor/outdoor environment that need to be improved. For example, this evaluation can lead to improving the physical environment in and around schools.
Evaluation Questions	***Process evaluation questions:*** Were the strategies to promote policies implemented as intended, if not, what changes were made? What were the challenges to promote air quality and environmental health policies to reduce asthma triggers? ***Outcome evaluation question:*** To what extent can increased adoption and implementation of asthma-friendly policies be attributed to programmatic and policy strategies?
Relevant Performance Measures	A, E
Relevant EXHALE Component	Environmental policies to reduce indoor & outdoor asthma triggers
Relevant Overarching Evaluation Question	To what extent has the recipient made progress toward achieving the long-term outcomes, including reduction of asthma disparities?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual Factors:** RIACP will take into account different types of partners and policymakers when evaluating policies to reduce indoor/outdoor asthma triggers.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	Promotion of asthma-friendly policies to reduce indoor/outdoor asthma triggers will reduce the burden of asthma in the state.

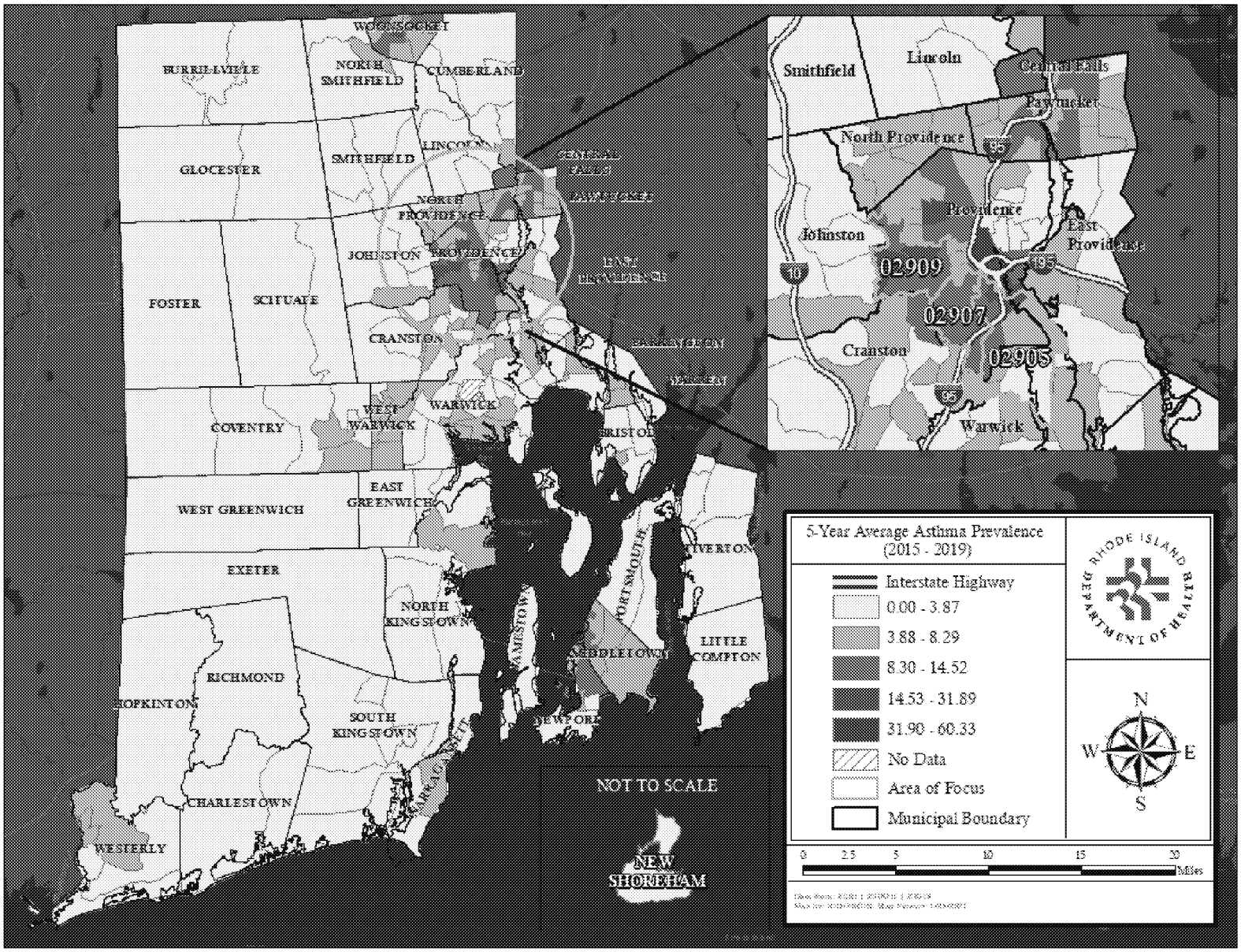
Activity Name	Evaluation of AS-ME expansion
Program Component	Infrastructure
Strategic Planning Theme	Healthcare, Education & Schools
Evaluation Justification	Expanding access to asthma self-management education will lead to improved health outcomes and will reduce the burden of asthma in RI.
Evaluation Purpose and Use	Evaluating this activity will identify gaps in comprehension of asthma self-management education for people with asthma and their caregivers and will also identify populations that need more AS-ME. Additionally, this evaluation could provide evidence about various approaches to tailoring AS-ME for diverse populations.
Evaluation Questions	***Process evaluation questions:*** Were the strategies to expand access to AS-ME implemented as intended, if not, what changes were made? What were the challenges encountered to expand access to AS-ME across RI? ***Outcome evaluation question:*** Did the number of Certified Asthma Educators increase in the state? To what extent can short-, intermediate-, and long-term outcomes related to improved health outcomes and reduced burden of asthma be attributed to expanded access to asthma self-management education?
Relevant Performance Measures	B, C, D, E, F, G
Relevant EXHALE Component	Education of asthma self-management
Relevant Overarching Evaluation Question	To what extent has RIACP leveraged partnerships and policies to expand the EXHALE strategies to ensure availability, efficiency, effectiveness, and health equity?
Timing of Evaluation	The evaluation will be on-going throughout the 5-year competitive grant agreement.
Suggested Evaluation Design	**Process evaluation** uses both quantitative and qualitative methods to measure dose and fidelity of EXHALE strategies. **Outcome evaluation** design uses a pre-test/post-test quasi-experimental time series design and quantitative statistical methods.
Potential Data Sources	Meeting notes, attendance logs, program documents, administrative data, interviews.
Potential Data Collection Methods	Ongoing data collection through personal and telephone interviews and focus groups. Data will be collected by the Lead Evaluator and Program Manager.
Cultural or Contextual Factors	**Contextual Factors:** RIACP will take into account different types of health care coverage (Medicaid VS. Commercial) and coverage of AS-ME. **Cultural Factors:** RIACP will take into account diverse populations to tailor delivery of AS-ME, including other languages in addition to English and Spanish.
Potential Audiences	Strategic Planning Stakeholders, CIACS Advisory Group, RI-AIR Advisory Group, Integra Community Care Network, UnitedHealthCare, RI Alliance for Healthy Homes, RI Medicaid, health payers, federally qualified health centers, private health care practices, state policy makers
Possible Uses of Information	Expanded access to asthma self-management education will improve health outcomes and reduce the burden of asthma in the state.

4. Communication Plan

Information about the SEP planning process will be shared with internal and external stakeholders involved in RIACP's asthma initiatives. Information about planning and implementation of the SEP will be shared on a quarterly basis. RIACP will provide information on our progress toward answering each of the overarching evaluation questions, achieving the CCARE goals, and EXHALE strategies with stakeholders. Results of the overall evaluation process will be summarized based on activities, progress toward reaching CCARE goals, and achieving EXHALE strategies in RI.

5. Proposed Methods to Update the Strategic Evaluation Plan

As noted in previous sections, the Strategic Evaluation Plan is a working document and will be updated on a quarterly basis. Updates will be shared with evaluation stakeholders throughout the evaluation process of each evaluation activity.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COVENTRY
BRISTOL
EAST GREENWICH
WEST GREENWICH
TIVERTON
EXETER
NORTH KINGSTOWN
PORTSMOUTH
JAMESTOWN
MIDDLETOWN
LITTLE COMPTON
RICHMOND
HOPKINTON
SOUTH KINGSTOWN
NEWPORT
CHARLESTOWN
WESTERLY
NEW SHOREHAM
NOT TO SCALE
5-Year Average Asthma Prevalence (2015 - 2019)
Interstate Highway
0.00 - 3.87
3.88 - 8.29
8.30 - 14.52
14.53 - 31.89
31.90 - 60.33
No Data
Area of Focus
Municipal Boundary
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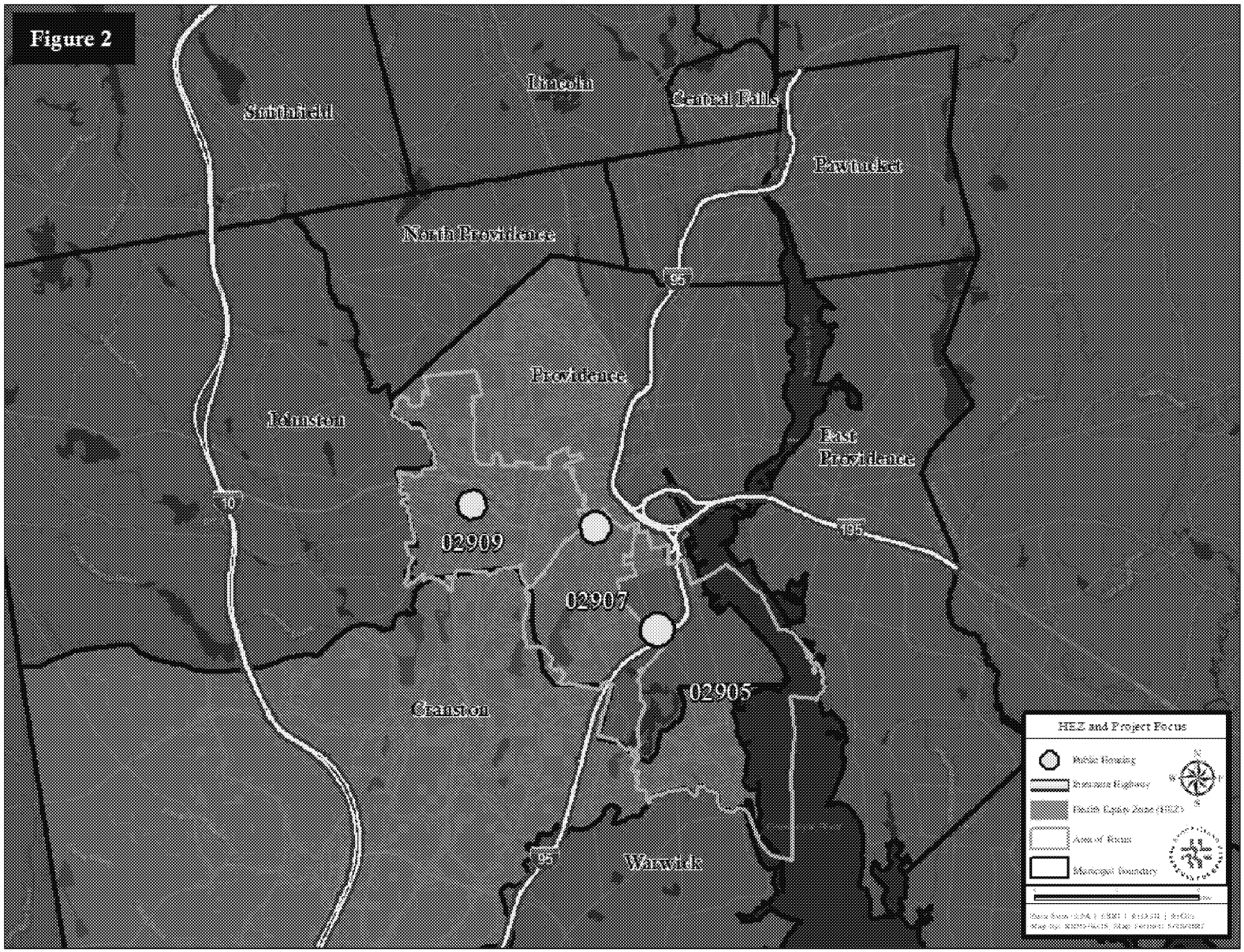
Figure 2
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HEZ and Project Focus

Rhode Island Asthma Control Program Data Management Plan

Rhode Island Department of Health
Asthma Control Program
March 25, 2022

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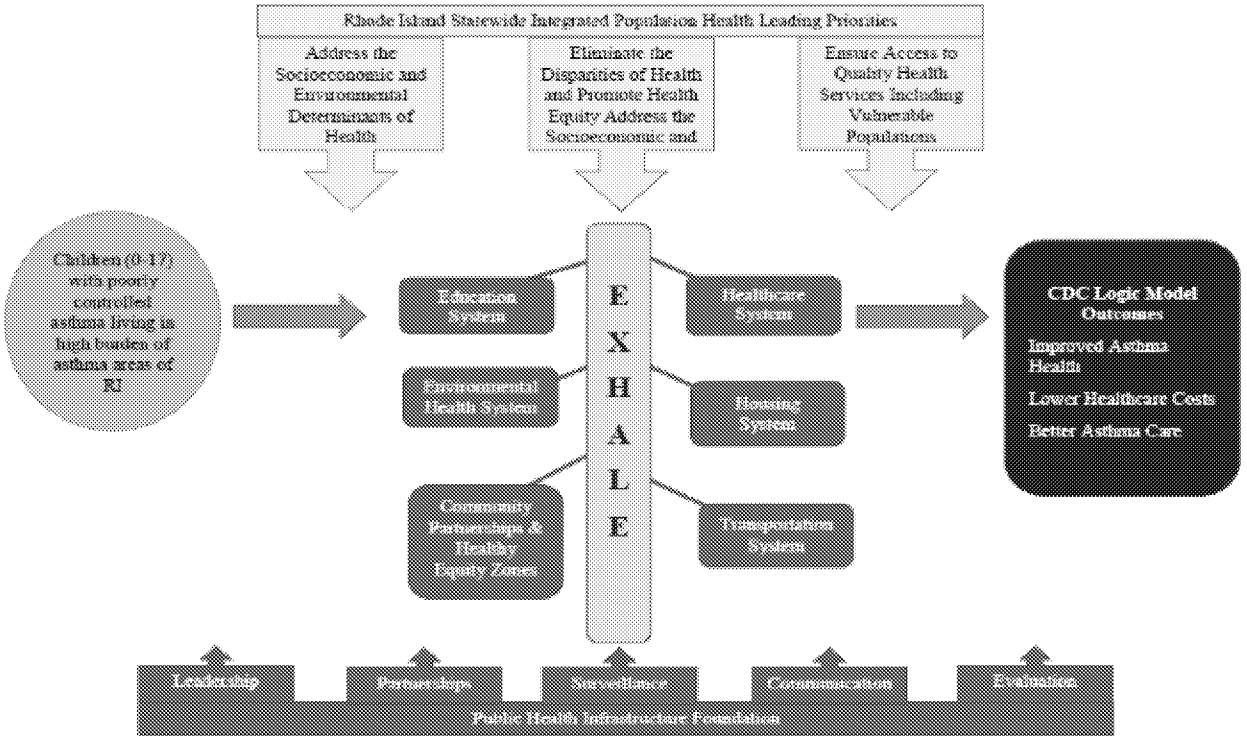
I. Overview

The Rhode Island Asthma Control Program (RIACP) is working with partners across the state to implement strategies outlined in the program's newly awarded five-year CDC grant (2019-2024). RIACP will strengthen and expand the state's current public health infrastructure to improve pediatric asthma outcomes by leveraging and coordinating interventions and policy initiatives across multiple partners. RIACP's work is guided by the Comprehensive Integrated Asthma Care System (CIACS) model (Figure 1), the 2020-2024 Asthma Control Strategic Plan (currently being developed), and the Rhode Island Department of Health's (RIDOH) Strategic Framework for reducing health disparities and achieving health equity in Rhode Island.[1] The overarching goal is to promote and sustain "*asthma-friendly communities*"— communities in which children with asthma are connected to quality asthma services, receive appropriate and ongoing treatment, and are not exposed to environmental factors that exacerbate their condition.[2]

Figure 1. *RIACP Enhanced CIACS Model*



RIACP's proposed evaluation plan to answer CDC's overarching evaluation questions is shown in Table 1. Additional questions are being developed to monitor progress on achieving the short-intermediate-, and long-term outcomes outlined in the program's logic model. The evaluation questions, approach/methodology, and type of data to be collected are still at an early stage, and will be shaped by the creation of the Strategic Plan. Therefore, Section II describes initial plans for collecting performance measure data. RI's Data Management Plan will be updated as evaluation questions are vetted with stakeholders. Other factors that will be considered are the needs of targeted recipients, local community needs, availability of data, feasibility of the evaluation design (needs assessment, process evaluation, and outcome evaluation) and the resources of partners who are best positioned to collect data for specific strategies.

II. Data to be collected or generated by RIACP

A. Documented activities and outcomes for the EXHALE technical package

Section II presents examples of strategies proposed for the establishment and expansion of linkages across the EXHALE technical package. As noted above, this section presents initial plans for the type of data to be collected.

Strategy B1. Education on Asthma Self-Management (AS-ME). RI will expand AS-ME access/delivery and diversity of the workforce by increasing the number of Community Health Workers (CHWs) who work with people with asthma and who become Certified CHWS. RIACP established a partnership with HousingWorks RI and the RI Alliance for Healthy Home to develop an asthma and healthy housing training. The training will be designed for CHWs working within various health and housing programs across the state to ensure they are equipped with fundamental topics on asthma and healthy housing. RIACP will work with RIDOH's Family Visiting Program to plan for a family-based approach to delivering asthma care within existing evidence-based home visiting programs. RIACP also has a strong history of working with Medicaid managed care organizations to improve care coordination between caregivers, health plans, and primary care providers. Additionally, RIACP will continue its partnership with the American Lung Association (ALA) and the Rhode Island Association for Certified Asthma Educators (RIACAE) to provide the two-day Asthma Educator Institute which prepares attendees to take the NAECB Asthma Certification Exam to become Certified Asthma Educators (AE-Cs).

Data on AS-ME programs. Data on the implementation outcomes of AS-ME training programs for CHWs and non-traditional partners will be collected through pre- and post-surveys. Data on the implementation and evaluation of a family-based approach to delivering asthma care will come from the RIDOH Family Visiting Program's Efforts to Outcomes (ETO) database. ETO is an electronic database system used to measure different family visiting program outcomes. Family Visiting Program staff follow all federal confidentiality and privacy rules for reporting Maternal, Infant, and Early Childhood Home Visiting data. The use of Asthma Action Plans (AAP) for patients enrolled in RIACP's asthma interventions can be stored in KIDSNET and reported to partners. KIDSNET is Rhode Island's confidential, computerized child health information system. Data on AS-ME outcomes from health systems partners will come from partners' electronic health records. RIACP will work with these partners to assist with reviewing data, outcomes, and evaluation efforts.

RIACP will use Geographical Information Systems (GIS) analysis to create spatial maps that overlap high asthma burden areas with the location of AS-ME programs in the community. The maps will help RIACP inform the public on health-related issues, such as the distribution of the burden of childhood asthma (e.g., prevalence, asthma-specific ED visits), associated social determinants of health, and the location of programs that are proven to be effective in improving overall health of children with asthma. The maps and findings from evaluation data will be shared with CDC and stakeholders.

Strategy B2. Extinguishing Smoking and Exposure to Secondhand Smoke. Smoking cessation referrals. Caregivers of children enrolled in asthma interventions will be asked if they or any other adults in the household currently smoke. Adults who smoke will be referred to smoking cessation programs, including QuitWorks-RI. The free service provides callers with resources for quitting cigarette smoking and other tobacco use and offers free Nicotine Replacement Therapy (NRT). The RIDOH Tobacco Control Program promotes the availability of Quitline services and partners with Tobacco Free Rhode Island, a statewide network of organizations and individuals working to reduce tobacco use.

Data on smoking cessation referrals. Findings on smoking status and exposure to secondhand smoke for families enrolled in RIACP's asthma interventions will be reported to stakeholders and the CDC. Data on adult use of cessation resources are available through several statewide tobacco cessation resources[3] and QuitWorks-RI.

Strategy B3. Home Visits for Trigger Reduction and AS-ME. Expand access to and delivery of asthma home visits. RI's Home Asthma Response Program (HARP) is provided to families who have a child with poorly controlled asthma and high rates of asthma ED visits and/or inpatient hospitalizations. HARP is an in-home, environmental asthma intervention provided in the cities of Central Falls, Pawtucket, Providence and Woonsocket. In these four cities an estimated 35% of children under age 18 live in poverty compared to 11% of children ages 0–17 in the rest of the state.[4] HARP is being expanded through health system partnerships with UnitedHealthcare® (UHC) of New England and Integra Community Care Network (Integra). Integra is the largest established Medicaid Accountable Entity in the state. UHC and Integra will provide HARP to their pediatric patients enrolled in Medicaid who have poorly controlled asthma.

Data on home visits and AS-ME. HARP data collected by CHWs working under Dr. Elizabeth McQuaid in the Childhood Asthma Research Program at Hasbro Children's Hospital (long time RIACP partner) are tracked and managed in REDCap (**R**esearch **E**lectronic **D**ata **Cap**ture. REDCap is a free, secure, HIPAA compliant web-based application hosted by Rhode Island Hospital/Hasbro Children's Hospital (Providence, RI). The database includes information on all components of HARP, including parents' completion of AS-ME. Evaluation results will be shared with stakeholders, including primary care providers, RI Medicaid, and other health plans to reinforce the benefits of asthma in-home services. New partners implementing HARP will develop their own system for tracking patients enrolled in HARP and to monitor program delivery and outcomes. Data sharing agreements will outline ownership of HARP data, confidentiality issues, and conditions for sharing data with RIACP.

Strategy B4: Achievement of Guidelines-Based Medical Management. Strengthen systems, improve medication access/adherence, and monitor QI Initiatives. RIACP will conduct a needs assessment of asthma care practices with health care providers. The needs assessment will be conducted with providers in federally qualified health centers (FQHCs) and primary care practices that are part of RI's multi-payer primary care payment and delivery system reform initiative known as Patient-Centered Medical Homes for Kids (PCMH-Kids). PCMH-Kids is a statewide multi-payer and multi-practice pediatric care transformation initiative that is patient-focused and prevention oriented.[5]

Other activities for Strategy B4 include: developing a baseline and tracking mechanism to monitor QI Initiatives; providing trainings to support workforce development; providing at least two presentations on guidelines-based asthma care and available services at RI's Care Transformation Collaborative meetings; and continuing to work with Integra to integrate HARP and guidelines-based asthma care into their Accountable Care Organization model. Throughout the grant cycle, RIACP will work closely with the RI Executive Office of Health and Human Services (RI-EOHHS) to expand and enhance comprehensive asthma services statewide. RI-EOHHS administers the Medicaid program and is the coordinating agency that includes all health and human service agencies in Rhode Island.

Data on QI initiatives. Priority QI initiatives are 1) access to care, 2) adherence to guidelines-based care for providers and 3) ensuring that all children who participate in asthma interventions have an updated AAP. The process evaluation will draw on meeting notes and documents. QI initiatives will be tracked, evaluated and reported to CDC and stakeholders, including AAP data entered in KIDSNET's Asthma page.

Strategy B5. Linkages and coordination of care across settings. RIACP has identified many strategies to increase the number of referrals to comprehensive asthma services for pediatric asthma patients. Activities include: 1) modifying KIDSNET's Asthma page to facilitate provider referrals to comprehensive asthma services and other programs in KIDSNET; 2) providing AAP education for providers through forum presentations, webinars, and other trainings to promote the use of AAPs as part of pediatric asthma patient care plans; 3) participating in TA meetings with the Institute for HealthCare Improvement and RIDOH's Health Equity Institute on developing recommendations for improving health outcomes at the local level that address the social determinants of health and health disparities; 4) implementing and evaluating the OneTouch™ referral tool used by the RI Alliance for Healthy Homes to provide healthy housing services to low-income families as indoor allergens exacerbate a child's asthma and can induce asthma attacks;[6] 5) providing training on asthma and healthy housing to CCHWs serving RI families in their home; and 6) sending bi-annual mailings to providers and families about asthma resources.

Data on coordinated care and linkages. RIACP has outlined multiple evaluation strategies for documenting linkages and coordination of care across settings. These include, but are not limited to: 1) collecting and disseminating surveillance data; 2) coordinating partners who implement EXHALE strategies and asthma services and documenting successes and challenges; 3) evaluating how information about RIACP's asthma services is used across different healthcare sectors; and 4) tracking RIACP's progress toward reaching overarching asthma care goals.

Data on coordinated care and linkages to care across settings (e.g., FQHCs, health plans, primary care practices) will be tracked, evaluated, and reported to the CDC and key stakeholders. The process evaluation will draw on meeting notes and documents. The outcome evaluation will come from RIDOH surveillance data.

Strategy B6. Adopt environmental policies or best practices to reduce indoor and outdoor asthma triggers. RIACP is continuing close collaboration with organizations involved in community-based climate related activities. This includes support for three Health Equity Zone (HEZ) communities working on local climate resilience activities (Cities of Pawtucket/Central Falls and

Newport, the Olneyville neighborhood in Providence). HEZ is a RIDOH initiative that brings people in a defined geographic area together and invests in helping residents and local organizations address health disparities using place-based collective impact approaches.[7]

For indoor environments, RIACP will link evidence-based asthma home visits (Strategy B3) with healthy housing resources including home energy efficiency and weatherization assistance. For outdoor air quality RIACP will: 1) engage with environmental health partners to promote adoption of policies and best practices to improve air quality and reduce exposure to asthma triggers, particularly in areas with the highest burden of asthma; 2) continue to work closely with RI Department of Environmental Management (RIDEM) and the RIDOH Health Laboratories to monitor ambient air quality, identify sources of air pollution near sensitive receptors (schools, residential areas, health care facilities) and implement strategies to improve air quality and reduce exposure to asthma triggers; and 3) work with RIDEM to promote the EPA's Diesel Emission Reduction Act grants in the Port of Providence and with school bus fleets.

Data on environmental strategy policies. RIACP will report information on entities that adopt new policies and best practices in annual performance reports. The process evaluation will draw on meeting notes and documents. The outcome evaluation will draw on the results of asthma hot spot maps created in 2014, 2019, and during the current grant period to assess changes in geographic and spatial variations in pediatric asthma ED visits and hospitalizations, overlaid with indicators such as poverty rates and environmental factors. Findings will be shared with CDC, the RI Alliance for Healthy Homes, health care providers and other stakeholders.

B. Core Asthma Measures

Core databases. The RI Asthma Surveillance System has five core datasets: 1) Behavioral Risk Factor Surveillance System (BRFSS), including BRFSS Random Child Selection and Child Prevalence modules; 2) BRFSS Adult and Child Asthma Call-back Surveys; 3) RI Hospital Discharge Data; 4) RI Emergency Department (ED) Visit Data; and 5) RI Vital Records.*

Analysis and reporting of data. All datasets in the RI Asthma Surveillance System are updated as data become available. RIACP has analyzed and reported core measures to CDC in all prior grant cycles and will continue to do so. Core measures include Adult Lifetime Prevalence, Child Lifetime Prevalence, Adult Current Prevalence, Child Current Prevalence, Hospital Discharge Rages (1st listed discharge diagnosis), ED Visit Rates (1st listed discharge diagnosis). Descriptive statistics (SAS statistical package) include frequencies, crosstabs, t-tests, and/or one-way ANOVA tests to estimate point prevalence (percentages with 95% confidence intervals), ratios, crude and age-adjusted rates. Data are aggregated when larger sample sizes are needed for analysis but suppressed if the relative standard error (RSE) is 30% or greater due to high sampling error. RIACP does not report asthma pediatric mortality rates (underlying case) as

* RI's Asthma Surveillance System includes four additional population-based datasets are housed at RIDOH Center for Health Data and Analysis: 1) All Payer Claims data; 2) Youth Risk Behavior Survey (middle school and high school); 3) KIDSNET; 4) ESSENCE," RI's syndromic surveillance system for ED visits. Three population-based datasets come from external agencies: 1) National Survey of Children's Health; 2) National Youth Tobacco Survey, and 3) RI Medicaid Claims data.

deaths in children attributable to asthma are rare. Mortality rates for adult asthma will be added as a core asthma measure.

RIACP has submitted Hospital Discharge Rates (1st listed discharge diagnosis) and ED Visit Rates (1st listed discharge diagnosis) for asthma (all ages) to CDC since 2012 and will continue to do so. Hospital and ED visit pediatric asthma rates by city/town (primary diagnosis) are analyzed and summarized annually for the Rhode Island KIDSCOUNT Factbook. Our program has tracked child asthma prevalence since 1999; the 1st year of CDC asthma grant funding. The surveillance data are important for program planning and policy recommendations. RIACP has been implementing the Home Asthma Response Program (HARP) since 2010. Children with poorly controlled asthma are connected to a PCP if the child does not have one, as well as to other asthma services. Our data show that child current asthma prevalence has not decreased significantly from 2009 to 2017 (11.0% vs.10.3%). There has been some decrease, however, in the asthma ED visit rate for children under the age of 18 living in RI's four high poverty cities (2010-2014 [aggregated data] 15.1 per 1,000 children vs. 2013- 2017 [aggregated data] 12.0 per 1,000 children). This trend suggests that HARP has had a positive impact on reducing preventable asthma ED visits among vulnerable children with asthma. Trend analysis of racial/ethnic and socioeconomic disparities in pediatric asthma will continue over the 5-year grant period. RIACP's analysis of Medicaid data will provided additional evidence in long-term trends for asthma costs and hospital/ED utilization within pediatric Medicaid. The data will help guide RIACP's work with partners to expand quality asthma services within health care and community settings.

C. Actions taken or decisions made to improve program activities and increase program effectiveness as a result of evaluation findings

RIACP used pediatric Medicaid claims data to generate a series of hot spot maps that assessed geographic clustering of pediatric asthma prevalence, ED visits and inpatient hospitalizations at the municipal and census tract levels. The results showed strong geographic disparities and found that although families with children enrolled in Medicaid have shared socioeconomic status, place matters for children with asthma. Two neighborhoods that have some of the highest rates of pediatric asthma in the state are South Providence and Washington Park in the City of Providence. The census tract in this area had the highest rate of asthma emergency department visits in Medicaid at a rate of 35 asthma ED visits per 1,000 children (2013-2017), and the highest overall burden of asthma based on an indexed combination of ranked rates including prevalence, ED, and hospitalization rates. This area is adjacent to the Port of Providence, which has the highest concentration of polluting businesses in the state. The city's industrial waterfront serves as a bulk commodities port for petroleum products, fuel oil, propane, cement, asphalt, and scrap metal, and is home to several chemical-processing plants.[8] South Providence and Washington Park residents also are exposed to high levels of traffic-related air pollution from Interstate 95. Most of the residents of South Providence are Hispanic or African Americans, where more than one out of three families live in poverty. Washington Park is a racially diverse low-income working-class neighborhood. RIACP will continue to share asthma data with community residents and organizations working to improve the quality of housing and reduce exposure to environmental pollutants in low-income neighborhoods. We also will reach out to organizations working to promote and preserve public open space and parks (e.g., treetop canopy cover) in these

communities. "Green space" is one means for reducing asthma severity in children with asthma and improving community health more broadly. [9,10] Protecting children's environmental health is a high priority for RIACP.

D. Existing, new, and discontinued services supported by RIACP and partners by geographic area, intervention type, and alignment of services with high burden geographic areas

RI's Strategic Plan describes the burden of asthma and availability of comprehensive asthma control services across the state. The focus is on the pediatric Medicaid population within areas of the state that are disproportionately impacted by asthma, including the Greater Providence area, and the cities of Newport, West Warwick and Woonsocket. While the percent of residents living in poverty is highest in the cities of Central Falls and Woonsocket (32.8% and 24.1%, respectively), it is also high in the cities of Newport and West Warwick when compared to RI overall (14.1%, 15.1% and 12.9%, respectively).[11]

In Years 1-5, RIACP will work with partners to: 1) address health disparities in high asthma burden areas; 2) collect and analyze data on available asthma services and initiatives; 3) implement the EXHALE strategies; and 4) monitor and evaluate outcomes from comprehensive asthma services. RIACP will work with key stakeholders to utilize asthma surveillance and evaluation findings to promote policies to reduce asthma triggers and improve asthma outcomes. Over five years, it is expected that EXHALE strategies implemented in RI communities that bear the highest burden of asthma will reduce disparities in pediatric asthma-related ED visits.

- *Asthma self-management education (AS-ME) outside of a home visit*

  In addition to AS-ME being provided during in-home visits through HARP, facility management workers at Providence Housing (public housing) will be trained to provide basic AS-ME and resources on asthma-friendly housing and safe cleaning practices for residents. Outside of the home setting, a HARP provider at St. Joseph Health Center incorporates AS-ME into clinical visits with asthma patients and their families.

- *Home visits for trigger reductions and/or AS-ME*

  Existing and continuing. As described previously, HARP is provided to families and their child with poorly controlled asthma in RI's four high poverty cities (Central Falls, Pawtucket, Providence and Woonsocket). This work continues in the next grant cycle. In Y1-5, RIACP will use VW settlement to expand HARP statewide for eligible Medicaid-enrolled children.

- *Interventions to improve asthma medical management*

  Existing and continuing. RIACP will continue to collaborate with Hasbro Children's Hospital Pediatric Primary Care practice and other PCMH practices to improve team-based care for high risk children with asthma and link families to asthma services. Hasbro Hospital is a long-time RIACP partner and sees the largest proportion of children with asthma in the state.

The hospital's Pediatric Primary Care physicians joined eight other practices in January 2016 to participate in PCMH-Kids to promote the use of coordinated care through the patient-centered medical home model. Pediatric Primary Care physicians developed a registry of higher-risk asthma patients based on prescription medication, ED use and hospitalization data.[12] RIACP's work with practices participating in PCMH-Kids provide new opportunities to assure optimal health for high-risk children with asthma.

- *Intervention to sustain linkages across interventions (including care coordination)*

  RIACP will be working with partners statewide to sustain linkages across interventions by:
  1. Modifying the asthma page in KIDSNET so providers know and apply evidence-based standards of asthma care, refer children with asthma and their families to a Certified Asthma Educator, help adults in the child's home quit smoking, and upload updated AAPs into KIDSNET so that School Nurse Teachers can access the plan.
  2. Promoting the use of AAPs as part of pediatric asthma patient care plans and provide AAP education for providers through forum presentations, webinars, and AEI trainings.
  3. Expanding the partnership with Hasbro Children's Hospital to ensure that families are contacted immediately after their child is seen in the ED for asthma and are connected to comprehensive asthma services.
  4. Promoting the use of the OneTouch e-referral program that connects health, energy, and housing home visiting and repair programs to cost-effectively improve health outcomes and reduce indoor environmental exposures that can trigger an asthma attack.

- *Smoke-free home policies in multi-unit housing*

  Existing and continuing. RIACP will continue to collaborate with the RIDOH Tobacco Control Program (TCP) on promoting tobacco-free policies. Currently, 22 out of 25 housing authorities in RI have adopted smoke-free policies. Over the next five years, RIACP will support TCP outreach and provision of technical assistance to private, affordable, multi-unit housing companies about implementing and enforcing smoke-free policies. The RIACP and TCP webpages will have hyperlinks so viewers can navigate between program websites. Both webpages will have information explaining how exposure to environmental tobacco smoke increases pediatric asthma severity. There also will be links to research showing that state-level tobacco control laws and policies are effective strategies for reducing smoking.[13]

- *Smoke-free school campus policies*

  Existing and continuing. RIACP will continue to collaborate with the RIDOH's Tobacco Control Program (TCP) on promoting tobacco-free policies at RI universities and colleges. Currently, only two campuses—Brown University Warren Alpert Medical School and Johnson and Wales University are 100% smoke free (e.g., the entire campus is smoke free both indoors and outdoors). Other RI higher education institutions follow state law by incorporating no smoking policies in and around all college buildings and residence halls, as well as establishing designated and limited outside areas for smoking.[14] Over the next five years, RIACP will support TCP outreach efforts and provision of TA to RI colleges/universities to implement a 100% tobacco-free policy.

E. RI Phase II Performance Measures (December 2019)

This section highlights RI's most recent Phase II. Performance Measures data submitted to CDC. The information will be updated as RI's 5-year work plan and Strategic Plan are implemented.

- Number and demographics of HARP-enrolled families who have a child with poorly controlled asthma who initiated and attended at least 60% of sessions of guidelines-based, AS-ME; and description of the setting and curriculum of AS-ME courses.

  Reported. Of the 71 children enrolled in HARP between March 2018 & August 2019, 67 children had poorly controlled asthma; 3 children had not well controlled asthma; and 1 child had good control. Asthma control status is based on a computer-generated algorithm that includes parent/caregiver responses on five asthma control questions (at intake) and whether the child has had an asthma ED visit or inpatient hospitalization in 12 months before enrollment in HARP.

  Dr. Elizabeth McQuaid developed the AS-ME curriculum for HARP. The curriculum is implemented during in-home visits. 94% of enrolled children (n = 67) completed 60% of the AS-ME sessions and 79% (n = 56) completed 100% of the AS-ME sessions.

  Characteristics of children enrolled in HARP between March 2018 & August 2019 (n= 71)

Ages 0- 4:	N = 26	Hispanic	N= 41
Ages 5- 11:	N = 37	African American	N = 6
Ages 12-17:	N = 6	White	N = 5
Age unknown:	N = 2	Race not specified	N = 19

- Number of participants with poorly controlled asthma on enrollment (a subset of the previous measure) who report that their asthma is well-controlled one month or more after attending at least 60% of AS-ME sessions.

  Reported. Of the 71 children enrolled in HARP during the reporting period, 38 children were using control medications at intake (53.5%). 31 children completed the intervention assigned and used controller meds less than 7 days a week by visit 3 or shortly after. Overall improvement (percentage change): 9% reduction.

- Documented improvements in the quality of care or health outcomes (e.g., asthma control, ED visits, hospitalizations, AS-ME) as a result of quality improvement initiatives.

  Reported. Of the 71 children enrolled in HARP during the reporting period, 16 had asthma control scores at baseline and at the 12-month follow-up. Eleven children had a decrease (improvement) in asthma symptoms and use of rescue medications; four children had no change in their average scores; one child had an increase in the average asthma control score.

F. **Standards to be used for collected or generated data**

Compliance. The Rhode Island Department of Health Asthma Control Program follows the instruction manual for entering performance measures data into the SharePoint site, provided by CDC's National Asthma Control Program.

Section F. describes the standards to be used for data currently in the RI Asthma Surveillance System, as well as for Medicaid data and HARP evaluation data. The Data Management Plan will be updated as MOUs are established between RIACP and partnering agencies. The MOUs will stipulate standards for accessing, sharing and using data.

- *Mechanisms for or limitations to providing access to and sharing of the data (include a description of provisions for the protection of privacy, confidentiality, security, intellectual property, or other rights) and access to identifiable and de-identified data.*

Compliance. RIACP follows CDC's Open Data Policy and Record Retention Policy.

It is the responsibility of the RIACP Epidemiologist/Evaluator to manage the data used for analysis of asthma outcomes and to ensure that the data are analyzed accurately with appropriate statistical controls. Eleven of the 12 population-based datasets that comprise the RI Asthma Surveillance System are de-identified (See Section B). Nine of the 11 datasets are overseen by the RIDOH Center for Health Data and Analysis [CHDA], including core asthma datasets. The Center requires that analysts requesting use of RI data complete a form explaining the reason for the data request and years requested. The population-based data housed at CHDA and the three population-based datasets in the public domain are housed on Dr. Pearlman's computer (RIACP Epidemiologist/Evaluator).

Medicaid data includes a child's street address, city, and zip code, which meet the HIPAA definition of identifiable data. The data reside in two secure computing environments at Brown University. One of these is a stand-alone server housed in a physically secured location at the School of Public Health. The server is secured from most external network access by the LAN's perimeter firewall, as well as its own local firewall. Access to the LAN server is via Microsoft's encrypted Remote Desktop protocol, employing the highest level of encryption supported. The other secure computing environment, "Stronghold," is maintained by Brown's Computing and Information Services (CIS) and creates restricted-access work environments. Dr. Michelle Rogers, Director of Data Core, Hassenfeld Child Health Innovation Institute, oversees the Medicaid data. She is vigilant about maintaining patient confidentiality and only use identifiers as necessary (e.g., geocoding addresses). PHIs are communicated on a need to know and minimum necessary basis. Identifiers are removed from the analytic data set after matching and geocoding are completed. Medicaid claims data and children's sociodemographic data (e.g., age, race) are only reported in the aggregate. Research staff working with Medicaid data have been informed of the rules and regulations regarding identifiable data.

HARP evaluation data from RIACP's HARP partners at Hasbro Children's Hospital are housed in REDCap. An e-signature and password are required to access the data. Dr. Pearlman has unrestricted access to the HARP data. Once data are downloaded the file is stripped of PHIs. Sociodemographic and intervention data are only reported in the aggregate. Dr. Pearlman is vigilant about maintaining patient confidentiality. HARP evaluation data are stored in a password protected file on Dr. Pearlman's RIDOH and Brown computers. Dr. Pearlman has met all compliance requirements for Brown University's Policy of Conflict of Interest and Commitment and COI In Research Policy.

- *Statement of the use of data standards that ensure all released data have appropriate documentation that describes the method of collection, what the data represent, and potential limitations for use.*

  Compliance. RIACP follows CDC's Open Data Policy and Record Retention Policy.

  RIACP is responsible for sharing the results of data from the 12 population-based data in the Asthma Surveillance System and from HARP. Findings are presented in charts, graphs, tables, hot spot maps, PowerPoint presentations and/or data briefs. Asthma data products document the method of collection, what the data represent (findings), sources of data used and potential limitations of the data.

  As noted above, 11 of the 12 population-based data in the Asthma Surveillance System are de-identified. Only the Medicaid claims data files include identifiable information. PHIs are removed from the Medicaid claims data before the files are aggregated to increase statistical power for analyzing the data. Individual observations are replaced with summary statistics based on those observations. The same procedures are followed in creating an analytic file from the HARP evaluation data. There are no privacy, ethical or confidentiality concerns in sharing findings from data described above with internal and external partners and CDC.

- *Plans for archiving and long-term preservation of the data or explaining why long-term preservation and access are not justified. This section addressed archiving and preservation of identifiable and de-identified data.*

  RIACP has three data repositories. First, de-identified population-based datasets maintained by the RIDOH Center for Health Data and Analysis or that are in the public domain, are stored without encryption and archived for long-term preservation at RIDOH. This allows epidemiologists in RIDOH programs to access these files. Second, Medicaid claims data files are archived for long-term preservation on Brown University's computer platforms that have restricted-access work environments to protect sensitive information. RIACP will confer with the Executive Office of Health and Human Services on whether Medicaid claims data files can be preserved after the current five-year grant ends. Third, HARP data files stored in REDCap are archived for long-term preservation.

Table 1. Rhode Island's Asthma Strategic Evaluation Framework	
Evaluation Q1.	To what extent has RIACP strengthened and expanded programmatic infrastructure to support optimizing services and health systems?
Evaluation Q2.	To what extent has RIACP leveraged partnerships and policies to expand the EXHALE strategies to ensure availability, efficiency, effectiveness, and health equity?
Evaluation Q3.	To what extent has RIACP successfully engaged health plans or health care practices in efforts to improve quality of care?
Evaluation Q4.	To what extent has RIACP made progress toward achieving the long-term outcomes, including reduction of asthma disparities?
Process Evaluation Design (Q1 to Q4)	Non-experimental (No comparison or control groups) Benefits: Will produce actionable findings regarding program outcomes, best practices, and performance improvement Limitations: Cannot control for extraneous factors that could influence outcomes, such as community contextual factors or selection bias.
Process evaluation questions (Q1- Q4)	1. Were the strategies implemented as intended, if not, what changes were made? 2. What were the challenges (problems) encountered to: strengthen and expand program infrastructure; leverage partnerships for EXHALE strategies; engage health plans and practices to improve quality of care; and reduce disparities? 3. Did the challenges vary based on the type of strategy or if the strategy was implemented statewide, municipal or neighborhood levels? 4. What are the program's successes statewide, at the municipal and neighborhood level?
Performance Measures (Q1 – Q4)	ocumented changes and/or improvements in: 1. Number of programmatic infrastructure activities implemented in each and across six EXHALE components within 5 years. 2. Number of partner-led (initiated) activities implemented in each and across six EXHALE components within 5 years. 3. Number of documented improvements in the quality of care or health outcomes within 5 years, especially in high burden / high poverty cities with *disproportionately* high rates of childhood asthma and asthma ED visits 4. Number of documented interventions that reduce disparities at the population and neighborhood levels within five years. 1- Q4. Partner engagement; alignment with state asthma plan, progress on meeting short- and intermediate outcomes in Logic Model, sustainability)
Analytic approach	Qualitative: Thematic identification (Confirmation of findings across sources) Quantitative: Descriptive statistics (Counts of changes by performance indicators)
Data sources	Process: Meeting agendas & minutes, attendance logs, program documents, administrative data, interviews, focus groups, direct observation, health systems quality improvement measures (Varies by evaluation question)

Outcome (Q4)	Quasi-experimental design.
Outcome evaluation questions	1. To what extent can short- intermediate- and long-term outcomes be attributed to programmatic and policy strategies? 2. Did the magnitude of the effect differ by type of strategy and reach (e.g., statewide, municipal or neighborhood level)? Q3. What was the influence of other factors?
Analytic tools	Quantitative: Descriptive statistics, between groups t-tests; ANOVA
Data sources	RI Asthma Surveillance System: HDD; ED Visit Data; Medicaid data; BRFSS Child Asthma Call-Back Surveys; All Payer Claims Data Partners: Health data from managed care organizations (MCOs) accountable care organizations (ACOs), health plans
Short-term outcome	Pre- to post-intervention changes and associated costs for asthma ED visits and hospitalizations for intervention group matched to comparison group on sociodemographic characteristics and geography. Stratified analysis by primary payer (Medicaid-enrolled; private insurance)
Long-term outcomes	1. High quality integrated comprehensive asthma services 2. Sustained policy and programmatic investments to reduce exposures to indoor and outdoor pollution, tobacco, and substandard housing conditions that contribute to persistent disparities in childhood asthma. 3. Reducing / preventing asthma ED visits and hospitalization among children with asthma within 5 years.
Potential audiences	All RIACP internal and external partners; neighborhood residents in communities with elevated asthma rates; other state asthma control programs; CDC

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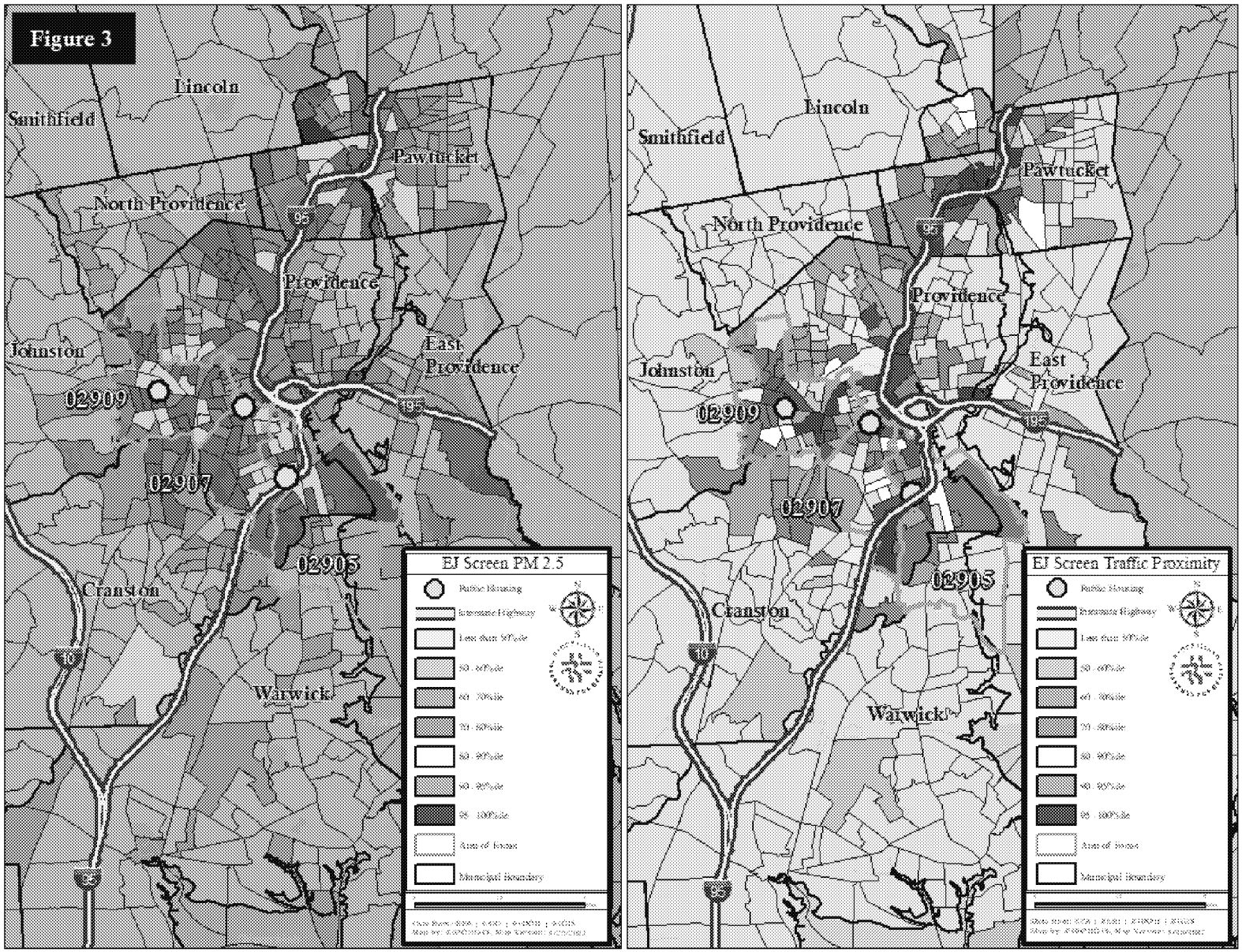


Figure 3
Lincoln
Smithfield
Pawtucket
North Providence
Providence
East Providence
Johnston
02909
02907
02905
Cranston
Warwick
EJ Screen PM 2.5
EJ Screen Traffic Proximity

2021-2024 Rhode Island Asthma Strategic Plan

February 2021

Rhode Island Department of Health

Health Resources in Action
Advancing Public Health and Medical Research

Table of Contents

Overview

This strategic plan contains the results of a comprehensive planning process undertaken by the Rhode Island Department of Health Asthma Control Program (RIACP) during the fall of 2020. The strategic planning process included participation from a wide variety of internal and external RIACP stakeholders, including leadership and staff, and subject matter experts from state agencies and non-state agency partners, to identify and refine the key focal areas for the RIACP over the next five years.

The mission and values of RIACP, along with the priorities identified from the data gathering, were used to develop goals, objectives, and strategies with interactive input from RIACP leadership and staff, who joined four virtual planning sessions to develop plan components. The outcome of this process demonstrates the deep commitment of RIACP to sustain its collaborative work serving the asthma prevention and control needs of the citizens of Rhode Island.

Background

RIACP contracted with Health Resources in Action, Inc. (HRiA), a nonprofit, public health consulting firm located in Boston, MA, to facilitate its strategic planning process. The goals of the process were threefold: 1) to identify priority areas where the RI Asthma Control Program could direct its strategic planning efforts; 2) to determine how the RI Asthma Control Program could focus efforts on these priorities to achieve the maximum impact and results for the State, including people who live, work and play in RI and are affected by Asthma; and 3) to develop a strategic plan with goals, objectives and strategies to direct this work over the next three years.

Helping to set the future direction for addressing asthma in Rhode Island

PURPOSE FOR THE PLAN:

This plan is an opportunity for cross-collaboration and collective impact in how programs and organizations address asthma across the state. This plan is not a comprehensive representation of all asthma control work. However, it offers a foundation and guidance for what has been lifted in terms of areas of focus. This plan was developed to meet the following needs:

- To help set priorities for RI Asthma Control Program
- To provide unified directions and ideas to stakeholders working on programs, policies, etc. related to asthma
- To highlight opportunities to address racial and health equity – focusing on the core cities.
- To meet requirement from the Centers for Disease Control and Prevention (CDC) for five year funding to RIDOH Asthma Prevention & Control Program

OPPORTUNITIES TO USE THIS PLAN MAY INCLUDE:

- To set priorities for asthma, healthy housing or other coalitions or programs, with the goal to have collective impact.
- To cite in grant proposals to provide rationale and validation for funding requests.
- To reference for Community Health Improvement Planning

Guiding Principles in Planning

The following guiding principles were used to guide the work and development of this plan:

1. PROMOTING HEALTH EQUITY

Racial and Social Determinants of Health factors in:

- Access to services and supports (translation services)
- Leadership and engagement
- Data and evidence
- Policies, systems and approaches

2. CLIMATE CHANGE

- Transportation
- Disaster recovery work
- Metrics between climate change and behavior patterns of asthma populations
- Heating and cooling intersection with housing

The Rhode Island Climate and Health Program is part of a national effort to anticipate and prepare for human health effects related to global and local climate change. The project is supported by the Climate-Ready States & Cities Initiative of the Centers for Disease Control and Prevention's Climate and Health program. The Building Resilience Against Climate Effects (BRACE) framework is a five-step process that allows health officials to develop strategies and programs to help communities prepare for the health effects of climate change.

In Rhode Island, increased storm intensity poses a threat of injuries and deaths due to a potential loss of power for air conditioning, heat, or medical needs; the loss of other critical infrastructure; and difficulty accessing resources. Residents also experience exposure to vector-born disease, declining air quality, increased pollen, aeroallergens, and pollution exposure, increasing risk for asthma and allergy exacerbations. Extreme heat is increasing the risk of heat-related illness for outdoor workers, seniors, and those with underlying medical conditions.

The Climate Change and Health Program works with RIDOH Health Equity Zones and community partners to help build community resilience to storms, flooding, heat, and other extreme events.

We work with a variety of community partners and other state agencies to educate the public about threats to public health from climate change and ways that they can mitigate and adapt to these threats.

RIDOH has a demonstrated commitment to health equity through their Health Equity Institute Health Equity Institute: Department of Health (ri.gov), as well as their Health Equity Zone (HEZ) initiative Health Equity Zones (HEZ) Initiative: Department of Health (ri.gov). A HEZ is an economically disadvantaged, geographically defined area with documented health risks and are funded through the RIDOH Health Equity Institute. In addition to these initiatives, RIACP will be collaborating with at least three HEZs on housing and environmental health efforts. As of Sept 2019, there will be 10 HEZ collaboratives[ii] across the state using innovative, place-based strategies to build healthier, more resilient, and more equitable communities at the local level. In Y1-5, RIACP will work with partners to: 1) focus on target populations in RI and address health disparities in the high asthma burden areas; 2) collect and analyze data on available asthma services and initiatives; 3) implement the EXHALE strategies; 4) monitor and evaluate outcomes from comprehensive asthma services.

RI Core Cities

RI data show striking racial/ethnic and socioeconomic disparities in pediatric asthma outcomes. Black and Hispanic children are more likely than White and Asian children to live in neighborhoods of concentrated poverty. RIACP serves children with asthma ages 0–17 living in the high poverty, urban "core cities" of Providence, Pawtucket, Central Falls, and Woonsocket, Rhode Island (RI), where the burden of asthma is highest. In these four cities the child poverty rate exceeds 25%. The burden of asthma falls disproportionately on black and Hispanic children, children in low-income households and children living in high poverty urban neighborhoods. These children are not only at high risk of developing asthma, but also are at risk of having more severe asthma once the disease develops.

Almost two-thirds (64%) of RI's children living in poverty are concentrated in just four cities (Central Falls, Pawtucket, Providence, and Woonsocket). Three of these cities, Central Falls, Pawtucket, and Providence, are adjacent to one another (Greater Providence area). The four core cities also have substantial numbers of children living in extreme poverty, defined as families with incomes below 50% of the federal poverty threshold, or $10,299 for a family of three with two children and $12,963 for a family of four with two children in 2019.[1]

Children living in RI's high poverty core cities face challenges above and beyond the burdens of individual poverty; many directly impact the development of asthma and severity of the disease. Please refer to **Figure 1**, which is a hotspot map showing asthma prevalence across the state. **Figure 2** is a hotspot map which highlights asthma prevalence within the core cities. Racial/ethnic and socioeconomic health disparities in pediatric asthma are the result of multiple factors, including exposure to family stress, poverty, neighborhood violence, poor housing, and environmental asthma triggers. These factors increase a child's risk of developing asthma and having more severe asthma. This is borne out by Rhode Island data.

Current asthma prevalence among children is higher in Rhode Island's high poverty urban core cities than the state average. Emergency department visit rates for a primary diagnosis of asthma are higher for children living in the core cities than for children overall in Rhode Island (11.1 per 1,000 children vs. 6.2 per 1,000 children). In 2016-2017, nearly 75% of ED visits where asthma was the first-listed discharge diagnosis were for Medicaid enrolled children (73%); 24% of children had commercial insurance; 3% were self-insured. Among the children enrolled in Medicaid who were seen in an ED because of asthma 51% were Hispanic, 26% White, and 16% non-Hispanic Black.

[1] 2020 RI KIDSCOUNT Factbook-Children in Poverty RIKCFactbook2019 (rikidscount.org)

Figure 1: Asthma Hotspot Prevalence in Rhode Island

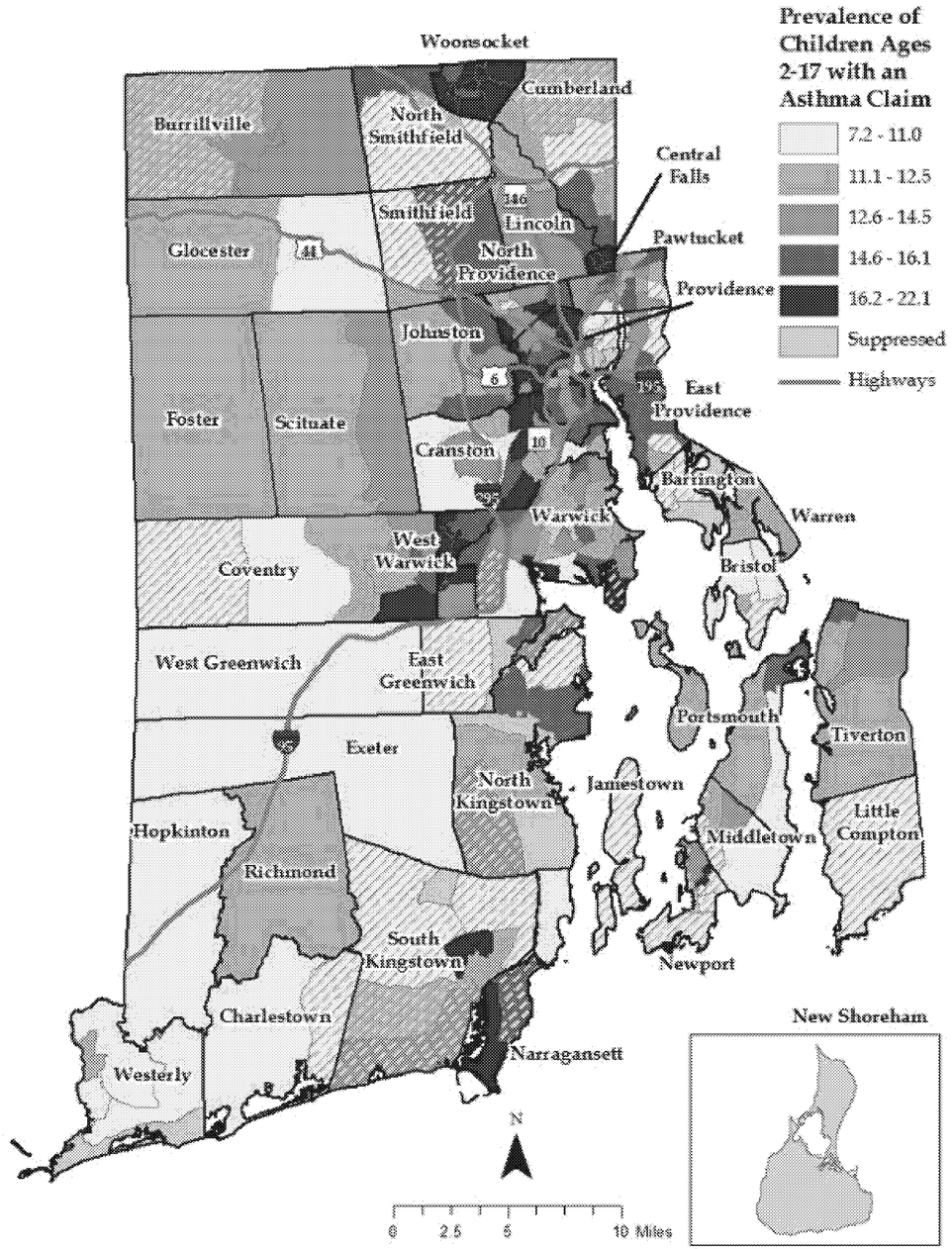
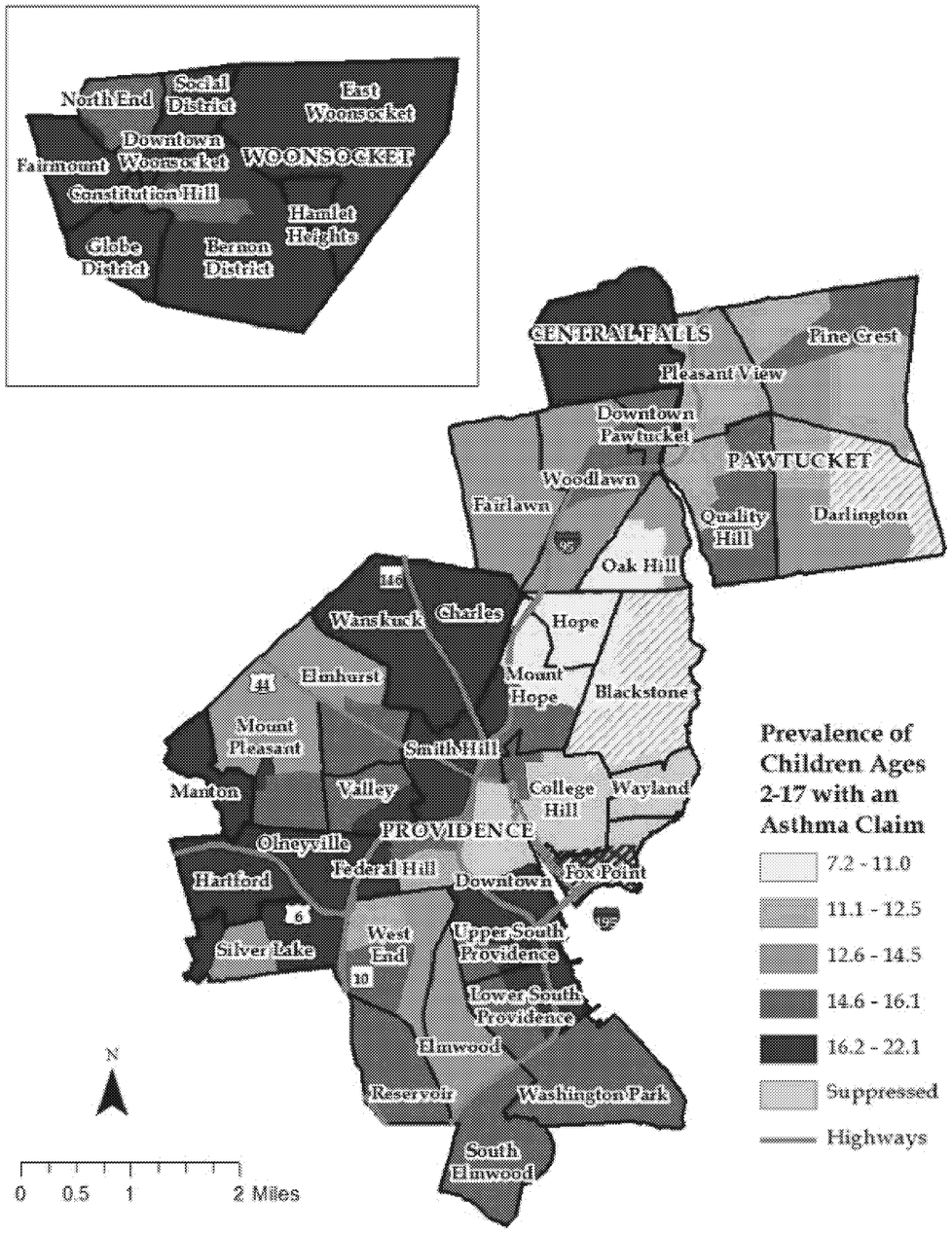


Figure 2: Asthma Hotspot Prevalence in Core Cities



PREVALENCE.[2]

In 2019, the prevalence of current asthma in Rhode Island was 7.3 (95% confidence intervals [CI] 5.6 to 9.0) among children aged 0 to 17 years and 11.2 among adults aged 18 and older (95% CI: 10.4 to 12.0). Data are from the Rhode Island Behavioral Risk Factor Surveillance System and are weighted to be representative of the state's population. The prevalence estimates highlight the burden of asthma among Rhode Island children and adults.

HOSPITALIZATIONS AND EMERGENCY DEPARTMENT (ED) VISITS.[1]

Between 2015 and 2019, there were 1,075 hospitalizations for children under 18 years of age in Rhode Island where asthma was the primary diagnosis, a rate of 1.0 per 1,000 children. Among children living in Rhode Island's four high poverty urban cities, the asthma hospitalization rate was higher than the rest of the state, at 1.6 per 1,000 children. During this 5-year period, there were 6,919 ED visits for children under 18 years of age in Rhode Island where asthma was the primary diagnosis, a rate of 6.2 per 1,000 children. In the four high poverty cities, the pediatric ED visit rate when asthma was the primary diagnosis was nearly twice that of the rest of the state, at 11.1 per 1,000 children.

Shown in **Tables 1 and 2** are inpatient hospital admission rates (*Table 1*) and emergency department (ED) visit rates (*Table 2*) per 1,000 Rhode Island children when asthma was the primary diagnosis. Data are aggregated over five years and shown statewide and by city/town. Also displayed is the Relative Standard Error (RSE). Rates are reported if the RSE is < 20 as the RSE affects the accuracy of the estimates and, therefore, the importance that can be placed on interpretations drawn from the data. When the RSE is between 20 and 29 the findings are reported with caution. Data are suppressed (not shown) if the RSE is 30 or higher.

Table 3 displays ED visit rates per 1,000 Rhode Island adults when asthma was the primary diagnosis. The five-year aggregated data are shown statewide, by Rhode Island's largest cities/towns, and by high poverty urban cities. ED visits rates were highest in Woonsocket (8.79 per 1000 adults) and Central Falls (7.48 per 1000 adults). In 2019, the percent of persons living in poverty in these two cities was 21.8% and 30.2%, respectively, which was significantly higher than the poverty rate for the state overall (10.8%).[3] The median household income (in 2019 dollars) aggregated over five years (2015–2019) was $32,982 in the city of Central Falls and $42,595 in the city of Woonsocket; well below the median household income for Rhode Islanders statewide ($67,167).[2] The cities of Central Falls and Woonsocket also had high pediatric ED visit rates when asthma was the primary diagnosis (12.1 per 1,000 children and 10.2 per 1,000 children, respectively).

[2] *The 2019 Rhode Island Behavioral Risk Factor Surveillance System and the 2015-2019 Rhode Island Emergency Department Visit and Hospital Discharge Data were analyzed by the Rhode Island Asthma Control Program epidemiologist for the Rhode Island State Strategic Plan.*

[3] *United States Census Bureau. QuickFacts. Rhode Island. https://www.census.gov/quickfacts/fact/table/RI/PST045219*

TABLE 1. Hospitalization rate per 1,000 children under age 18 for a primary diagnosis of asthma by municipality, core cities and the state, 2015–2019 (*aggregated data*)

CITY/TOWN	Estimated # Children <18 yr. (2010 Census)	Estimated # of Children under Age 18 (~5 years)	# pediatric ED visits asthma primary DX (~5 years)	Rate pediatric ED visit asthma primary DX per 1,000 Children	Relative Standard Error (RSE)
Barrington	4,597	22985	34	1.5	17.13720
Central Falls	5,644	28220	48	1.7	14.42147
Coventry	7,770	38850	25	0.6	19.99355
Cranston	16,414	82070	58	0.7	13.12597
Cumberland	7,535	37675	23	0.6	20.84500
East Providence	9,177	45885	43	0.9	15.24275
Johnston	5,480	27400	18	0.7	23.56241
Lincoln	4,751	23755	13	0.5	27.72734
Middletown	3,652	18260	29	1.6	18.55478
Newport	4,083	20415	26	1.3	19.59910
North Providence	5,514	27570	22	0.8	21.31158
Pawtucket	16,575	82875	123	1.5	9.00999
Providence	41,634	208170	358	1.7	5.28062
Tiverton	2,998	14990	12	0.8	28.85589
Warwick	15,825	79125	37	0.5	16.43597
West Warwick	5,746	28730	28	1.0	18.88900
Westerly	4,787	23935	12	0.5	28.86034
Woonsocket	9,888	49440	54	1.1	13.60082
Four core cities	**73,741**	**368705**	**583**	**1.6**	**4.13830**
Remainder of state	**150,215**	**751075**	**492**	**0.7**	**4.50687**
Rhode Island	**223,956**	**1119780**	**1075**	**1.0**	**2.90834**

TABLE 2. ED visit rate per 1,000 children under age 18 for a primary diagnosis of asthma by municipality, core cities and the state, 2015–2019 (*aggregated data*)

CITY/TOWN	Estimated # Children <18 yr. (2010 Census)	Estimated # of Children under Age 18 (~5 years)	# pediatric ED visits asthma primary DX (~5 years)	Rate pediatric ED visit asthma primary DX per 1,000 Children	Relative Standard Error (RSE)
Barrington	4,597	22985	100	4.4	9.97821
Bristol	3,623	18115	53	2.9	13.71594
Burrillville	3,576	17880	39	2.2	15.99534
Central Falls	5,644	28220	341	12.1	5.38248
Coventry	7,770	38850	149	3.8	8.17659
Cranston	16,414	82070	358	4.4	5.27362
Cumberland	7,535	37675	102	2.7	9.88807
East Greenwich	3,436	17180	30	1.7	18.24148
East Providence	9,177	45885	227	4.9	6.62079
Exeter	1,334	6670	24	3.6	20.37565
Glocester	2,098	10490	20	1.9	22.33936
Hopkinton	1,845	9225	25	2.7	19.97289
Johnston	5,480	27400	119	4.3	9.14706
Lincoln	4,751	23755	79	3.3	11.23216
Middletown	3,652	18260	105	5.8	9.73089
Narragansett	2,269	11345	23	2.0	20.83026
Newport	4,083	20415	191	9.4	7.20181
Newport	4,083	20415	191	9.4	7.20181
North Kingstown	6,322	31610	87	2.8	10.70635
North Providence	5,514	27570	191	6.9	7.21063
North Smithfield	2,456	12280	31	2.5	17.93784
Pawtucket	16,575	82875	714	8.6	3.72624
Portsmouth	3,996	19980	51	2.6	13.98491
Providence	41,634	208170	2519	12.1	1.98035
Richmond	1,849	9245	16	1.7	24.97839
Smithfield	3,625	18125	34	1.9	17.13375
South Kingstown	5,416	27080	66	2.4	12.29413
Tiverton	2,998	14990	24	1.6	20.39608
Warren	1,940	9700	40	4.1	15.77875
Warwick	15,825	79125	308	3.9	5.68693
West Greenwich	1,477	7385	19	2.6	22.91203
West Warwick	5,746	28730	187	6.5	7.28888
Westerly	4,787	23935	87	3.6	10.70161
Woonsocket	9,888	49440	506	10.2	4.42273
Four core cities	**73741**	**368705**	**4080**	**11.1**	**1.55687**
Remainder of state	**150215**	**751075**	**2839**	**3.8**	**1.87324**
Rhode Island	**223957**	**1119780**	**6919**	**6.2**	**1.19848**

TABLE 3. ED visit rate per 1,000 adults aged 18 and over for a primary diagnosis of asthma by selected municipalities, core cities and the state, 2015–2019 (*aggregated data*)

CITY/TOWN	Estimated # Children <18 yr. (2010 Census)	Estimated # of Children under Age 18 (*5 years)	# pediatric ED visits asthma primary DX (*5 years)	Rate pediatric ED visit asthma primary DX per 1,000 Children	Relative Standard Error (RSE)
Central Falls	13990	69950	523	7.48	4.356317
Cranston	64149	320745	685	2.14	3.816721
East Providence	38477	192385	372	1.93	5.179743
Newport	21194	105970	403	3.8	4.971873
Pawtucket	56279	281395	1345	4.78	2.720185
Providence	138161	690805	3954	5.72	1.585751
Warwick	68040	340200	795	2.34	3.542488
West Warwick	24014	120070	509	4.24	4.423017
Woonsocket	32290	161450	1419	8.79	2.642967
Four core cities	**240720**	**1203600**	**7241**	**6.02**	**1.171629**
Rhode Island	**849422**	**4247110**	**13449**	**3.17**	**0.860926**

From 2014-2018, the number of child emergency department visits with asthma as the primary diagnosis were highest among children living in the four core cities compared to the rest of the state. Asthma tends to be located in areas where there are high rates of poverty.

The Planning Process

Data Gathering

Gathering data is an important foundation for guiding and constructing a strategic plan. Data gathering efforts for this plan included a document review, key informant interviews, and community conversations. Four community conversations were held; one in Spanish, to engage stakeholders throughout the state and priority populations in dialogues regarding asthma prevention, education, intervention, and impact around the four priority areas. Interview and discussion questions were designed to explore perceptions of the internal strengths and weaknesses of RIACP, as well as the external opportunities and threats in the dynamic healthcare environment in which RIACP operates.

This process engaged organizations from many sectors including public health, community-based organizations, education, medicine, and research. HRiA synthesized and compiled the key themes and recommendations from these efforts, which were presented to RIACP and stakeholders during a Key Themes meeting to review the findings, recommended priority areas of focus, criteria for selection and guiding principles for the strategic plan.

PRIORITY AREAS

On October 14, 2020, HRiA presented RIACP leadership and stakeholders with the key themes from the data gathering efforts as well as recommended priorities for planning based on those themes. The recommendations were discussed and finalized into the following Priority Areas and subtopics of focus for the RIACP strategic planning sessions:

PRIORITY AREA	SUB-CATEGORIES (Potential Objectives)
Housing	• Housing conditions/quality • Impact of poverty — SDOH • Home visits • Housing resources for IPM
Healthcare/System	• Legislative level changes • Reimbursement for non-traditional interventions • Insurance • Health outcomes — SDOH • Health literacy • Asthma Action Plans
Education System & Schools	• Absenteeism • Healthcare — school — absences • School environment/indoor air quality • Deferred school maintenance
Air Quality & Transportation	• Neighborhoods bordering highways & asthma rates • Air quality and air pollution reduction • Air quality and school absences • ALA report card

Planning Sessions

HRiA's trademarked strategic planning approach is called Facilitating Alignment and Strategic Thinking (FAST™). It is an efficient and effective planning process, which, unlike a traditional strategic planning approach that can take many months, is a shorter, more cost-effective way of planning that produces high-quality results and delivers high value and satisfaction for stakeholders.

Using this approach, HRiA worked with RIACP leadership to design four virtual, "rapid" strategic planning sessions that took between November and December 2020 (**See Figure 1**). RIACP staff, leadership and stakeholders engaged in interactive discussions in four groups organized by priority area, and through a structured, iterative process facilitated by HRiA, developed a set of goals, objectives, and strategies that will enhance the development and delivery of RIACP programming and services throughout the State. See **Appendix B** for a list of planning organizations.

VIRTUAL PLANNING FOR STRATEGIC PLAN

Participation Criteria
- Able to participate via Zoom (audio AND visual)
- Available to participate in ALL sessions

Time Commitment
Per participant: 9.5 hours of sessions + homework (assumes participation in only one (1) Priority Area).

A 1.5 hours	**SP PLANNING** (Pre-Planning Webnar	• Zoom/Online Tools Overview • Assessment Findings • SP Priorities • SP Structure	• Planning Process Overview • Time Commitment • Next Steps	
B 1.5 hours	PRIORITY 1 Draft Goals	PRIORITY 2 Draft Goals	PRIORITY 3 Draft Goals	PRIORITY 4 Draft Goals
C Virtual Feedback	Goals Feedback			
D 2 hours	PRIORITY 1 Revise Goals Draft Objectives	PRIORITY 2 Revise Goals Draft Objectives	PRIORITY 3 Revise Goals Draft Objectives	PRIORITY 4 Revise Goals Draft Objectives
E Virtual Feedback	Objectives Feedback			
F 2.5 hours	PRIORITY 1 Revise Objectives Draft Strategies	PRIORITY 2 Revise Objectives Draft Strategies	PRIORITY 3 Revise Objectives Draft Strategies	PRIORITY 4 Revise Objectives Draft Strategies
G Virtual Feedback	Strategies Feedback			
H 2 hours	PRIORITY 1 Finalize Strategies	PRIORITY 2 Finalize Strategies	PRIORITY 3 Finalize Strategies	PRIORITY 4 Finalize Strategies

The Strategic Framework

A strategic plan includes several key elements: a vision which articulates the preferred future RIACP is trying to create as a result of its work; a *mission statement* that articulates a central purpose: whom do we serve, for what purpose, and in what ways that are unique or distinct?; and the key principles that guide every aspect of RIACP's work, from decision-making to priority-setting, and from partnerships to engagement strategies. Based on prioritization of key themes identified through the data gathering and analysis process, specific *goals, objectives, and strategies* are developed to accomplish the mission and vision, in alignment with the core values and beliefs.

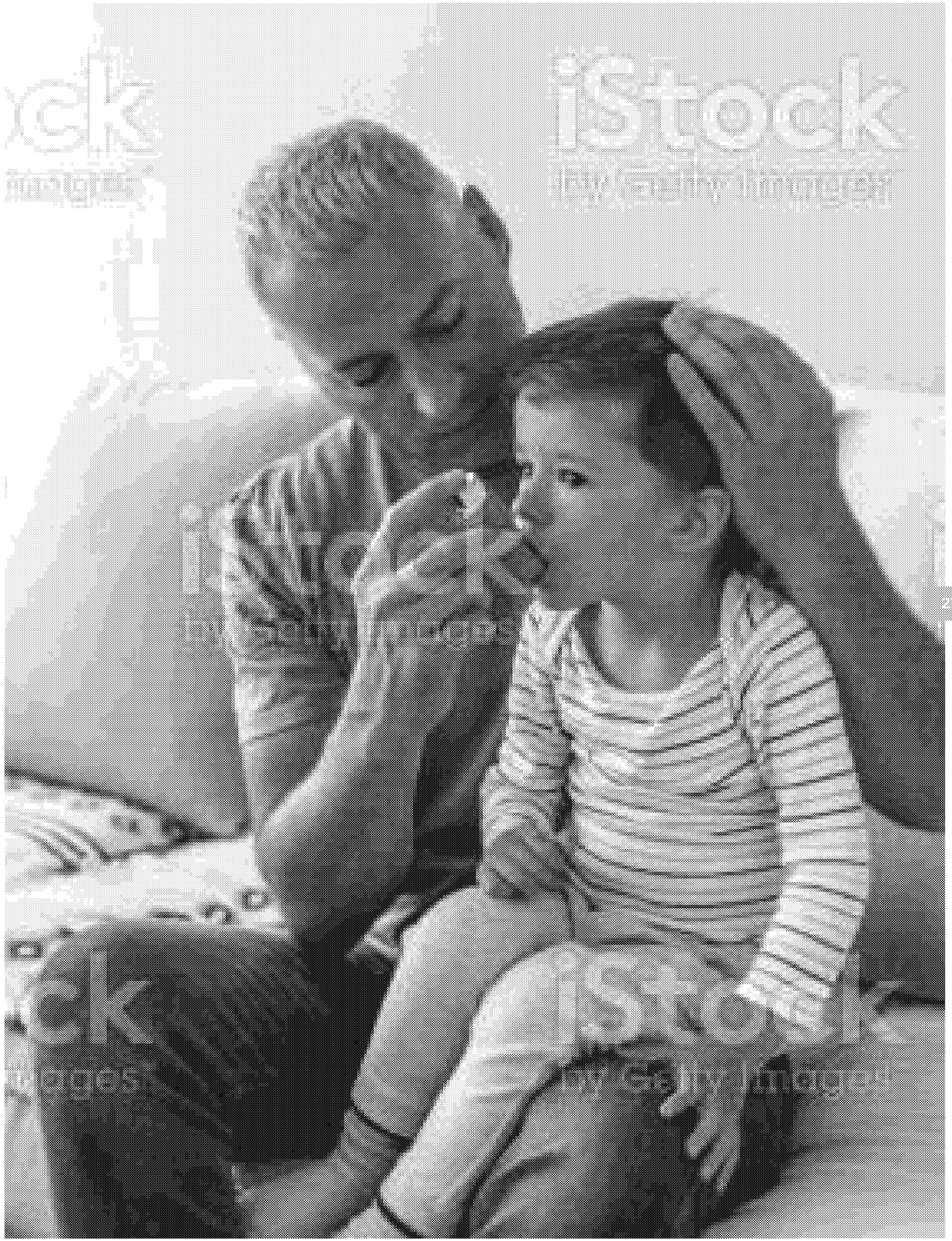
It is important to clarify the nomenclature of the plan so that those engaged in implementing and refining the plan operate from the same definitions and assumptions. Strategic plans are organized in categories that range from broad to narrow, as follows:

- **Priorities** are key areas of focus that provide specific categories for planning.
- A **goal** describes in broad terms a desired result or change in the priority area.
- **Objectives** articulate goal-related outcomes in specific and measurable terms. Objectives are narrow, precise, tangible, concrete and SMART (specific, measurable, achievable, relevant, time-phased). In the case of RIDOH ACP, they are also Inclusive and Equitable.
- **Success Measures** are interim indicator(s) of progress toward completion of a goal or objective.
- A **strategy** describes an approach to getting things done. It answers the question, "How can we get from where we are now to where we want to be?"

Final Plan Development

The draft strategic plan was compiled by HRiA and included suggestions and recommendations for revision. The draft plan was reviewed and edited by RIACP's leadership and further refined by HRiA to ensure overall consistency of language and format across priorities. A final review by RIACP leadership resulted in this final plan.

Rhode Island Asthma Control Program's Strategic Plan



Mission

To reduce overall asthma burden and asthma health disparities in Rhode Island.

What we do

Serve as a unified access point for community-based services and interventions.

Our Services

CLINICAL

SCHOOL

HOME-BASED

- Breathe Easy at Home
- Home Asthma Response Program

Strategic Plan Priorities & Goal Statements

PRIORITY 1:

Housing

GOAL 1: All Rhode Islanders live in healthy and affordable housing that is free of harmful conditions that increase asthma related risks.

PRIORITY 2:

Healthcare/ System

GOAL 2: Improve health outcomes and achieve health equity by enhancing access to affordable, holistic, and comprehensive asthma care for all people in RI.

PRIORITY 3:

Education System & Schools

GOAL 3: Collaboration among key stakeholders to support equitable K-12 healthy school environments that promote respiratory health, wellness, and readiness to learn.

PRIORITY 4:

Air Quality & Transportation

GOAL 4: Ensure all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

PRIORITY AREA 1:

Housing

GOAL 1: All Rhode Islanders live in healthy and affordable housing that is free of harmful conditions that increase asthma related risks.

OBJECTIVE 1.1:

Create/adapt innovative education campaigns to educate key stakeholders on their role in reducing asthma rates in RI, and the resources available by 2025.

SUCCESS MEASURES:

1. Number of innovative education campaigns created/adapted
2. Outcomes Measured by:
   - All Payer Claims Database (existing secondary data that would enable us to track this issue)
   - RIDOH Healthy Homes Survey data
   - KidsNet

STRATEGIES:

1.1.1: Identify the key stakeholder groups (e.g., consumers, tenants and landlords, medical providers/healthcare professionals, schools).

1.1.2: Establish a knowledge baseline for each key stakeholder group utilizing a survey and/or other sources of evidence.

1.1.3: Conduct an assessment of what education campaigns already exist in order to identify what campaign(s) need to be adapted or created.

1.1.4: Create innovative campaigns where none exist (consider including Healthy Homes information).

1.1.5: Pilot education campaigns, prioritizing high risk groups.

1.1.6: Revise content & approach as needed based on pilot feedback.

1.1.7: Roll out education campaigns state-wide.

1.1.8: Assess impact and share results of the education campaigns and the improvement of key stakeholders understanding of their role.

1.1.9: Determine changes needed based on assessment, and recurring frequency or availability.

OBJECTIVE 1.2:

Coordinate efforts with other housing groups to explore dedicated funding streams for the creation of healthy and affordable housing that reduces asthma triggers by 2025.

SUCCESS MEASURES:

1. Number of dedicated funding streams
2. Outcomes Measured by:
   - State Feasibility Study data (funding for asthma interventions)
   - RIDOH
   - RI Life Index

STRATEGIES:

1.2.1: Convene/Reconvene housing groups around the topic of funding dedicated for asthma (e.g., Homes RI, housing, health, energy, and climate groups).

1.2.2: Expand existing network to make sure that all key stakeholders are on newsletters and/or are attending events/meetings (e.g., Health Equity Fund, housing, health, energy, and climate groups).

1.2.3: Coordinate advocacy efforts to secure a dedicated funding stream with existing groups and other partners.

1.2.4: Build in an asthma piece in the funding streams conversations (i.e., make sure that conversation happens around asthma).

1.2.5: Explore innovative alternative funding streams for asthma and healthy housing.

OBJECTIVE 1.3:

Pass at least two (2) pieces of legislation that would ensure rental properties meet minimum quality standards by 2025.

SUCCESS MEASURES:

1. Number of pieces of legislation passed

STRATEGIES:

1.3.1: Collaborate with the RI Center for Justice, League of Cities and Towns to build upon the work already done to draft legislation.

- Pass the Certificate of Rental Habitability or something comparable
- Add asthma triggers (e.g., mold) to Minimum Housing Standards

1.3.2: Identify and engage key stakeholders to gather support for the legislation.

1.3.3: Coordinate efforts of key stakeholders to lobby for passing the legislation.

1.3.4: Educate the legislators on the importance of the legislation (advocacy around the issue, involving community members).

1.3.5: Identify an ambassador for leading the charge on building support for the legislation.

OBJECTIVE 1.4:

Incorporate Healthy Home building standards into current building code and regulations by 2025.

SUCCESS MEASURES:

Healthy Home building standards incorporated into building code and regulations

STRATEGIES:

1.4.1: Collaborate with housing groups, builders' association, realtor's association, etc. to build support for changes to codes & regulations.

1.4.2: Develop a brief of the Health Homes Building Standards to educate and inform members of the State Building Commission.

1.4.3: Amend the state enabling law to change the minimum codes/laws in order for towns to have the authority to change the codes and regulations (should investigate whether this would be needed).

1.4.4: Work with city and town councils to amend existing regulations in communities with the highest need (e.g., highest number of asthma cases).

OBJECTIVE 1.5:

Incorporate nationally recognized healthy housing strategies into the way energy programs are designed and implemented, and how services are provided by 2025.

SUCCESS MEASURES:

Nationally recognized Healthy Housing strategies incorporated into energy programs

STRATEGIES:

1.5.1: Identify the existing energy programs.

1.5.2: Conduct an assessment of what existing energy programs already incorporate Healthy Housing strategies and which populations are utilizing those programs in order to identify gaps and establish a baseline.

1.5.3: Provide training on Healthy Housing strategies and standards to energy program providers, to emphasize the importance of including these strategies in their energy programs.

1.5.4: Coordinate efforts with energy program providers to implement their programs in areas where the most vulnerable populations, including high utilizer asthma patients, reside.

OBJECTIVE 1.6:

Reform the current system of housing code enforcement for improved accessibility for the public by 2025.

SUCCESS MEASURES:

System of housing code enforcement reformed

STRATEGIES:

1.6.1: Conduct an assessment of towns and municipalities to determine the landscape that we are operating in and to identify gaps.

1.6.2: Explore other housing code models (e.g., Providence) to identify models that could be implemented statewide.

1.6.3: Work with partners (e.g., RI League of Cities and Towns) to identify and adapt a model for RI.

1.6.4: Roll out the model state-wide.

1.6.5: Assess impact and share results.

1.6.6: Determine changes needed based on assessment, and revise model accordingly.

PRIORITY AREA 2:

Healthcare/System

GOAL 2: Improve health outcomes and achieve health equity by enhancing access to affordable, holistic, and comprehensive asthma care for all people in RI.

OBJECTIVE 2.1:

Decrease asthma related ED visits among children aged 2-17 by 5% in Rhode Island by 2024.

SUCCESS MEASURES:

1. Number of asthma related ED visits among children aged 2-17
2. Outcomes Measured by:
   - Medicaid claims data
   - Hasbro referrals
   - RIDOH ED dataset
   - All-Payor Claims database

STRATEGIES:

2.1.1: Promote asthma screening for children aged 2-17.

2.1.2: Increase the number of health care providers that address environmental factors related to asthma.

2.1.3: Implement targeted outreach to populations who report disparate asthma outcomes.

OBJECTIVE 2.2:

Increase the number children with well controlled asthma by 15% in RI by 2024.

SUCCESS MEASURES:

1. Number children with well controlled asthma
2. Outcomes Measured by:
   - Medicaid claims database
   - HARP data for AAP's
   - RIDOH KidsNet
   - EHR data

STRATEGIES:

2.2.1: Identify and promote 20 opportunities for RI children to receive affordable, comprehensive asthma care.

2.2.2: Children with asthma and their caregivers receive, understand, and can use their Asthma Action Plans.

2.2.3: Children receive a referral to a certified asthma educator following a positive asthma screen.

2.2.4: Provide culturally and linguistically appropriate literature for asthma triggers, control, programs, and treatment.

2.2.5: Explore medication adherence among children who have asthma enrolled in Medicaid.

2.2.6: Collaborate with pharmacists on medication use, adherence, and education.

2.2.7: Using systems approach to train providers on best practices for asthma care and management

2.2.8: Provide asthma education programs that offer CEU's to providers.

2.2.9: Advocate for the inclusion of CAE and CHW's in value-based or other payment arrangements.

OBJECTIVE 2.3:

Increase utilization of RIACP-funded programs by 10% by 2024.

SUCCESS MEASURES:

1. Utilization of RIACP-funded programs
2. Outcomes Measured by:
   - HARP REDCap database
   - RIDOH KidsNet

STRATEGIES:

2.3.1: Promote awareness of RIACP-funded programs among community health centers, pharmacies, and school nurse teachers that serve target populations with disparate asthma outcomes.

2.3.2: Promote referrals to RIACP-funded programs from community health centers, pharmacies, etc.

2.3.3: Promote RIACP-funded programs as an opportunity for health care providers to address environmental factors related to asthma.

2.3.4: Promote the use of multi-lingual and cultural services among RIACP-funded programs.

OBJECTIVE 2.4:

Increase the number of certified asthma educators by 30 and CHW's by 50, who are trained in asthma and healthy housing by 2024.

SUCCESS MEASURES:

- Number of certified asthma educators (AE-Cs) who are trained in asthma and healthy housing
- Number of CHWs who are trained in asthma and healthy housing

STRATEGIES:

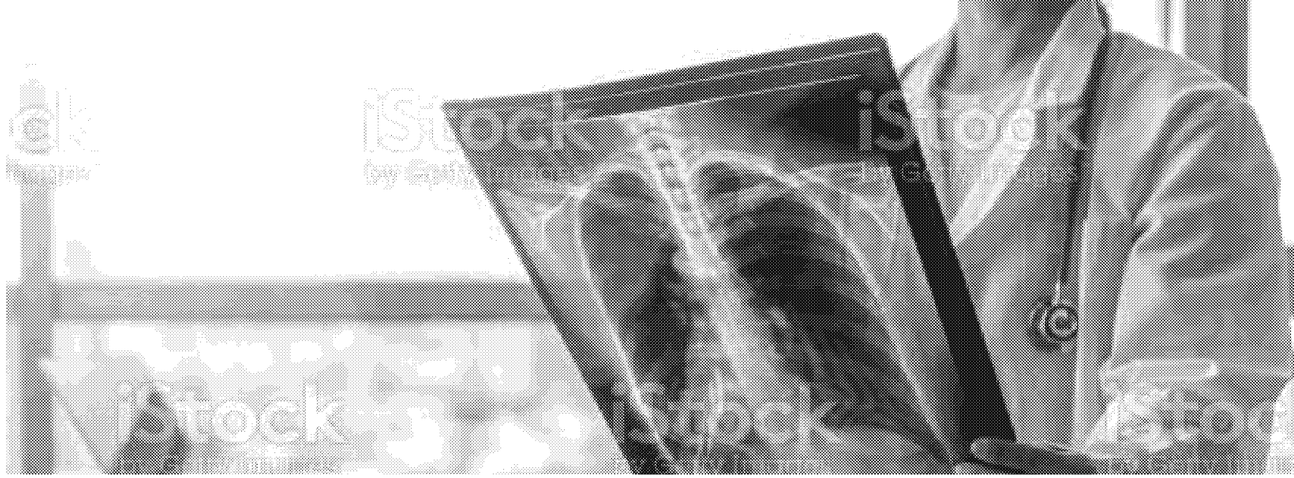
2.4.1: Promote certification testing for asthma educators to health professionals through recruitment and retention efforts

2.4.2: Establish Certified CHW specialty certification for asthma and healthy housing to include asthma triggers, inhaler use, ACT's and CASI for asthma control, how to understand asthma action plans and referrals.

2.4.3: Promote bilingual and multicultural asthma education for and among CAE's and CHW's.

2.4.4: Explore and promote scholarship opportunities for CAE and CHW education; particularly for populations that are underrepresented in this area.

2.4.5: Promote the incorporation of information about asthma, asthma triggers and healthy housing into the certification process/ licensure renewal for housing professionals (including home visitors such as energy auditors, healthy homes inspectors and energy efficiency and home improvement contractors).



OBJECTIVE 2.5:

Increase the number of payors or provider practices that utilize the home asthma response program (HARP) or an evidence-based asthma home visit program into their health care transformation efforts by 3 by 2024.

STRATEGIES:

2.5.1: Advocate for the inclusion of asthma home visiting in value-based or other payment arrangements.

2.5.2: Promote referrals to HARP among provider practices and ED's.

OBJECTIVE 2.6:

Engage 50 school nurses in asthma training to increase asthma management within schools in RI by 2024.

STRATEGIES:

2.6.1: Identify (or convene) a school nurse collaborative to learn about existing programs, gaps, and barriers to managing asthma in Rhode Island Schools

2.6.2: Implement management training to school nurse collaborative that addresses gaps and barriers

2.6.3: Promote the use of bilingual and multicultural asthma education materials by school nurses in RI.

PRIORITY AREA 3:

Education System & Schools

GOAL 3: Collaboration among key stakeholders to support equitable K-12 healthy school environments that promote respiratory health, wellness, and readiness to learn.

OBJECTIVE 3.1:

Increase and sustain infection control measures by maintaining signage on handwashing, respiratory hygiene practices (coughing into elbow), soap and wipes in all K-12 schools by 2021.

SUCCESS MEASURES:

1. Number of infection control measures
2. Outcomes Measured by:
   - Annual School Health Report, CDC, EPA

STRATEGIES:

3.1.1: Survey schools in collaboration with RIDE'S annual school health report to identify existing infection control measures and identify gaps, including maintaining signage on handwashing, respiratory hygiene practices (coughing into elbow), soap and wipes.

3.1.2: Establish a partnership with Rhode Island Association of School Maintenance Directors (RIASMD) to sustain infection control measures established during the COVID-19 pandemic.

3.1.3: Ensure utilizing all available federal funding.

3.1.4: Continue education of students and staff around appropriate respiratory hygiene practices.

3.1.5: Collaborate with RIDE on guidance for school buildings.

OBJECTIVE 3.2:

Increase asthma health literacy of students and parents in K-12 schools to achieve optimal asthma management by 2024.

SUCCESS MEASURES:

1. Number of families who participate in Hasbro Children's Hospital's Draw a Breath Asthma Self-Management Education program.
2. ACT

STRATEGIES:

3.2.1: Ensure equity by increasing collaboration between medical home and school health professionals to provide wrap around care for all students.

3.2.2: Educate students and caregivers (e.g. HASBRO's Draw a Breath) on comprehensive asthma management focusing on districts where asthma rates are highest (culturally and multilingually appropriate).

3.2.3: Educate teachers and staff on asthma triggers and asthma action plans (AAPs) to provide continuity of safe care throughout the school day.

3.2.4: Identify and refer virtual students with asthma to home visiting programs (e.g. RIACP's Home Asthma Response Program) as appropriate for asthma management in their home environment.

OBJECTIVE 3.3:
Develop a statewide system to track absenteeism due to asthma in all K-12 schools by 2025.

SUCCESS MEASURES:
1. Statewide system developed
2. Outcomes measured by
   - RIDE (RI Department of Education) attendance data
   - Attendance Works (national data)

STRATEGIES:
3.3.1: Survey schools to identify existing tools that capture absenteeism data (related to asthma).

3.3.2: Identify existing best practices for capturing absenteeism data due to asthma.

3.3.3: Coordinate with RIDE and RIDOH to add reason for absence to current collection tool.

3.3.4: Coordinate and educate administration and families on importance of reporting reason (asthma) for absence.

OBJECTIVE 3.4:
Increase and maintain indoor air quality and ventilation in school buildings to reduce asthma triggers by 2023.

SUCCESS MEASURES:
1. (air quality)
2. (ventilation)
3. Outcomes measured by
   - ISIAQ (International Society of Indoor Air Quality and Climate)
   - Harvard School of Public Health (school environment and IAQ data)

STRATEGIES:
3.4.1: Survey school population (staff, faculty, and students) for school-based asthma triggers.

3.4.2: Review Indoor Air Quality Management Plan with facilities to maintain a multidisciplinary risk reduction approach.

3.4.3: Identify existing gaps.

3.4.4: Advocate for funding to maintain indoor air quality (use EPA—Tools for Schools).

3.4.5: Advocate for a collaboration between RIDE and LEA's (Local Education Agencies) to maintain optimal indoor air quality and ventilation.

PRIORITY AREA 4:

Air Quality & Transportation

GOAL 4: Ensure all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

OBJECTIVE 4.1:
Leveraging RIACP's existing asthma hot spot mapping through convening relevant state agencies and municipalities (e.g., RIDOH, RIDEM, RIDOT and RIPTA) four times a year to discuss indoor and outdoor air quality around hot spot maps by 2025.

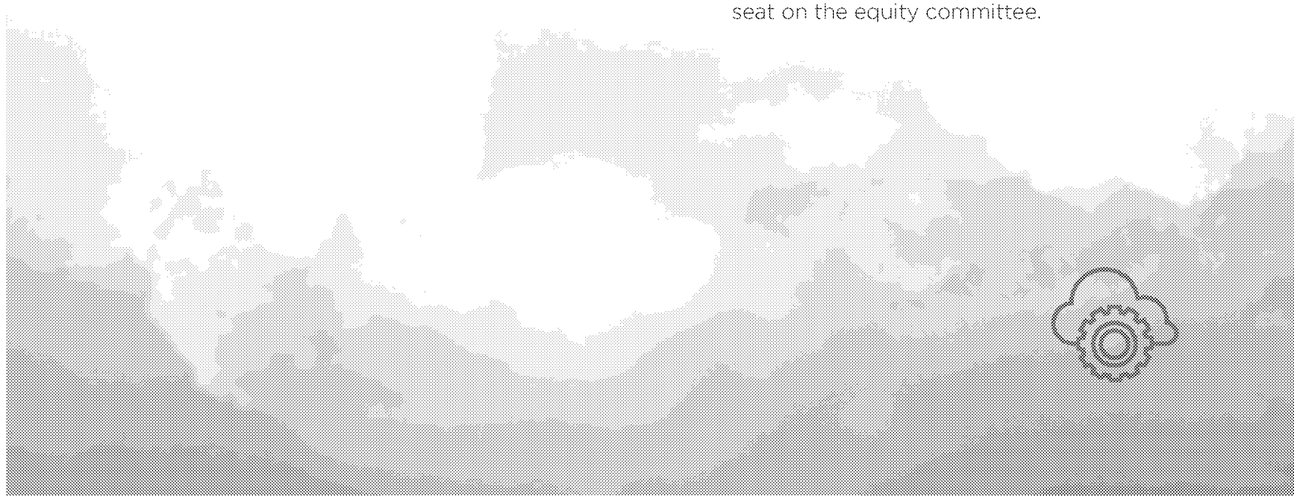
SUCCESS MEASURES:
Asthma hospital and ED data maps

STRATEGIES:
4.1.1: Create lasting partnerships and collaboration between regulatory agencies and the communities they cover.

4.1.2: Enhance collaboration between RIDOH, RIDEM and RIDOT to develop collaborative approach that focuses on asthma and air quality.

4.1.3: Create asthma program technical workgroup that includes agencies and members of the community to inform agency planning around environmental justice and health equity.

4.1.4: Ensure that low income communities of color are fairly represented in the enabling legislation for the Transportation Climate Initiative Program and that RIACP has a seat on the equity committee.



OBJECTIVE 4.2:
Improve transportation infrastructure and reduce traffic congestion in and around low income and communities of color by 2025.

SUCCESS MEASURES:
RI Division of Planning has vehicle miles traveled (VMT) and single occupancy rides data

STRATEGIES:

4.2.1: Reduce overall vehicle miles traveled per capita by X%.

4.2.2: Promote and work with towns to pass, fund, and implement complete street ordinances.

4.2.3: Improve the public transportation system, both adequate service and infrastructure (e.g., bus shelters for winter (heating) and summer (cooling)), particularly in low income and communities of color.

4.2.4: Ensure that 35% of the investments from the Transportation Climate Initiative Program are designated for low income and communities of color.

4.2.5: Engage community around Rhode Island's Zero Emission Vehicle Plan and ensure that rebates and benefits go to low -and middle-income consumers .

4.2.6: Educate local law enforcement on the importance of anti-idling and enforcement mechanisms.

4.2.7: Incentivize carpooling through priority parking.

OBJECTIVE 4.2:
Improve air quality by promoting construction best practices for HVAC systems, enhancing building codes, and enhancing green spaces in low income and communities of color by 2025.

SUCCESS MEASURES:
Tree Equity Score Analyzer tool provides tree equity scores and canopy cover numbers

STRATEGIES:

4.3.1: Prioritize asthma hot spots for investments in the heating sector transformation project.

4.3.2: Increase efficiency of heating, ventilatin, and air conditioning (HVAC) systems.

4.3.3: Improve green infrastructure, around schools, public housing, and other vulnerable communities with things such as tree barriers in roadways; tree benches/ living walls; tree canopy.

Appendices

Appendix A:
Strategic Planning Session Organizations

HOUSING ORGANIZATIONS

Blackstone Valley Health Center
Brown University
Childhood Lead Action Project
City of Central Falls Code Enforcement
City of Central Falls Office of Health
Community Health Worker Association of RI
Green and Healthy Homes Initiative of RI
Hasbro Children's Hospital
Housing Works RI
Integra Community Care Network
LISC-Pawtucket/Central Falls HEZ
Medical Legal Partnership of Boston
Neighborhood Health Plan of RI
Newport Family Partnership
Newport HEZ
ONE Neighborhood Builders (Olneyville HEZ)
Pawtucket Code Enforcement
Providence Code Enforcement
Providence Housing Authority
Providence Office of Sustainability
Providence Planning and Development
Racial and Environmental Justice Committee (REJC)
RI Alliance for Healthy Homes
RI Attorney General
RI Building Code Commission
RI Center for Justice
RI Housing
RI Housing Resources Commission
Woonsocket Code Enforcement
Woonsocket HEZ

SCHOOLS/EDUCATION ORGANIZATIONS

American Lung Association
Blackstone Valley Health Center
Brown University School of Public Health
City of Central Falls Office of Health
Hasbro Children's Hospital
Hassenfeld Child Health Innovation Institute
Providence Public School Department
RI Association for Certified Asthma Educators
RI Attorney General
RI Certified School Nurse Teachers
RI College of Nursing
RI Department of Education
St. Joseph Health Center
Women's Medicine Collaborative
Woonsocket HEZ

HEALTHCARE/SYSTEMS ORGANIZATIONS

American Lung Association
Asthma Regional Council
Blackstone Valley Health Center
City of Central Falls Office of Health
Brown University
Childhood Lead Action Project
Community Health Worker Association of RI
Green and Healthy Homes Initiative of RI
Hasbro Children's Hospital
Hassenfeld Child Health Innovation Institute
HousingWorks RI
Integra Community Care Network
Medical Legal Partnership of Boston
Neighborhood Health Plan of RI
Newport HEZ
ONE Neighborhood Builders (Olneyville HEZ)
PCMH-Kids
Providence Community Health Center
RI Alliance for Healthy Homes
RI Association for Certified Asthma Educators
St. Joseph Health Center
Women's Medicine Collaborative
RI Attorney General
RI Center for Justice
RI Certified School Nurse Teachers
RI College of Nursing
RI Department of Education
RI Health Center Association
RI Medicaid
RI Primary Care Physicians Corporation
United Health Care of New England
Woonsocket HEZ

AIR QUALITY & TRANSPORTATION ORGANIZATIONS

Asthma Regional Council
Brown University School of Public Health
City of Central Falls Code Enforcement
EPA Region 1
Green and Healthy Homes Initiative of RI
HousingWorks RI
LISC-Pawtucket/Central Falls HEZ
Newport Family Partnership
Newport HEZ
ONE Neighborhood Builders (Olneyville HEZ)
One Square World-Racial & Environmental Justice Committee
Pawtucket Code Enforcement
Providence Office of Sustainability
Providence Planning and Development
Racial and Environmental Justice Committee (REJC)
RI Alliance for Healthy Homes
RI Attorney General
RI Building Code Commission
RI Department of Education
RI Department of Environmental Management
RI Public Transit Authority
RI Statewide Planning
Washington Park Neighborhood Association
Woonsocket Code Enforcement
Woonsocket HEZ

Appendix B:
Acronyms Used in this Strategic Plan

AAP — Asthma Action Plan
ACBS — Asthma Call Back Survey
ACT — Asthma Control Test
AE-C — Certified Asthma Educator
AIS — Asthma in Schools
ARC-NE — New England Asthma Regional Counsel
BCBSRI — Blue Cross Blue Shield of Rhode Island
BEAH — Breathe Easy at Home
BRFSS — Behavioral Risk Factor Surveillance System
CASE — Controlling Asthma in Schools Effectively
CASI — Composite Asthma Severity Index
CCDM — Chronic Care & Disease Management
CDOE — Certified Diabetes Outpatient Educator
CEU — Continuing Education Unit
CFHE — Community, Family Health and Equity
CHDA — Center for Health Data and Analysis
CHIP — Children's Health Insurance Program
CHW — Community Health Worker
CMS — Centers for Medicare and Medicaid
CPS — Center for Preventive Services
CSI — Chronic Sustainability Initiative
CPHC — Center for Public Health Communication
DAB — Draw A Breath
ED — Emergency Department
EHR — Electronic Health Record
EJL — Environmental Justice League
EPR — Electronic Patient Record
FQHC — Federally Qualified Health Centers
HARP — Home Asthma Response Program
HDD — Hospital Discharge Data
HEDIS — Healthcare Effectiveness Data Information Set
HEI — Health Equity Institute
HEZ — Health Equity Zone
HRHH — Healthy Residents, Healthy Homes
HVAC — Heating, ventilation, and air conditioning
IAQ — Indoor Air Quality
IEP — Individual Evaluation Plan
ISIAQ — International Society of Indoor Air Quality and Climate
NAECB — National Asthma Education Certification Board
NEAIC — New England Asthma Innovation Collaborative
NHLBI — National Heart, Lung, and Blood Institute
NCQA — National Committee for Quality Assurance
NHPRI — Neighborhood Health Plan of Rhode Island
MCH — Maternal Child Health
MIECHV — Maternal, Infant, and Early Childhood Home Visiting
OHIC — Office of the Health Insurance Commissioner
PCMH — Patient Centered Medical Home
QI — Quality Improvement
RIDE — Rhode Island Department of Administration
RSE — Relative Standard Error
SEP — Strategic Evaluation
RIACAE — Rhode Island Association of Certified Asthma Educators
RIACC — Rhode Island Asthma Control Coalition
RIACP — Rhode Island Asthma Control Program
RIAPCD — Rhode Island All Payer Claims Database
RIDE — Rhode Island Department of Education
RIDEM — Rhode Island Department of Environmental Management
RIDOH — Rhode Island Department of Health
RIDOT — Rhode Island Department of Transportation
RIPTA — Rhode Island Public Transit Authority
SNT — School Nurse Teacher
VMT — Vehicle miles traveled

Appendix C:
Partners & Resources

HOUSING

AE's (*accountable entities, e.g., Integra*)
Builders association
CAP agencies (*weatherization and energy efficiency*)
Center for Justice
Community Based Advocacy Groups (*e.g., Refuge Dream Center*)
DARE (*Direct Action for Rights of Equality*)
Daycare Center Providers and Groups
DBR (*Division of Business Regulation*)
Energy Program providers
Governor's Office
Health Equity Fund
Health Equity Zones
Homes RI
Hospital settings
Housing groups
Housing groups
Housing, health, energy, and climate groups
Impacted community members
Individual Towns and Cities
Labor and Building Trades
Lead Centers (*some do asthma work as well*)
Local Planning Departments
MCOs, EOHHS
Municipalities (*e.g., Healthy Communities office*)
People implementing the State Energy Plan
Realtors association
Representation from each of the Key Stakeholder groups
RI Alliance for Healthy Homes
RI Foundation
RI League of Cities and Towns
RIDOH
Schools and medical providers
Tennent Network of RI

HEALTHCARE/SYSTEM

Current Care
Landmark Health Center, Woonsocket
RI school nurses' association
St. John's Health Center

EDUCATION SYSTEM & SCHOOLS

CDC
EPA (*Tools for Schools-as resource)*
HASBRO
Healthy Schools Network (*national level)*
LEA's
RI School Building Authority
RIASMD
RIDE
RIDEM (*Department. of Environmental Management*)
RIDOH
RIHSC (*RI Healthy Schools Coalition*)
SSNC (*state school nurse consultants*)

AIR QUALITY & TRANSPORTATION

CAP Agencies (*weatherization*)
Community health workers
DEM
Division of Statewide Planning
DOT
Gov. office (*need money in a bond*)
Green Schoolyards America
Health care systems
HEZ
Housing agencies
OER
RI Alliance for Healthy Homes
RI Infrastructure Bank
RIDE

Appendix D: Data Sources

HOUSING

- BRFSS
- American Community Survey
- Census Data
- EOHHS Ecosystem
- Housing Court Data (Maybe)
- RIDOH Lead Inspection Data

EDUCATION SYSTEM & SCHOOLS

- AHERA IAQ
- Absenteeism Data
- Harvard Schools IAQ Report
- Johns Hopkins Providence Schools Report
- Department of Education Conditions of Schools Report (2017)

HEALTHCARE/SYSTEM

- RI Emergency Department Data
- RI Hospital Discharge Data
- Medicaid Claims Data
- Medicaid Maps
- BRFSS
- PCMH-Kids/CTC-RI

AIR QUALITY & TRANSPORTATION

- Environmental Public Health Tracking Network
- Windy
- National Weather Service
- PurpleAir
- RI Department of Environmental Management
- RIDOH Lab — Air Quality Data (e.g., air quality alert days)
- RIPTA

Appendix E: Action Planning

This is a sample Action Planning template that can be used for annual action planning for implementation. Stakeholders can use this as a guide for developing annual action plans for their programs that reflect strategic planning elements that are most relevant to them and their individual programs.

PRIORITY 1:					
GOAL 1:					
Objective 1.1:					
Success Measures *(can be at the goal level or by objective, depending on the measurability of the objectives)* 1. 2.					
Strategies	**Actions**	**Person(s) Responsible** L=Lead, M=Manage, I=Implement	**Timeline**		
			Y1	**Y2**	**Y3**
Resources Required *(human, partnerships, financial, infrastructure or other)* •					
Monitoring/Evaluation Approaches •					

Strategic Plan

Action Plan

TERM	DEFINITION/DESCRIPTION
Priority	A category of focus.
Goal	A projected state of affairs that a person or a system plans or intends to achieve. Identifies in broad terms how your initiative is going to change things in order to solve the problem you have identified. A result that one is attempting to achieve.
Objective	Objectives articulate goal-related outcomes in specific and measurable terms. Objectives are narrow, precise, tangible, and concrete. Objectives are SMART (specific, measurable, achievable, Relevant, time-phased)
Success Measures	Measure(s) of progress toward the objective. These measures ultimately let your team know if the plan was successful in impacting the objective. This may help you identify activities that are useful in meeting your objective(s), and those that are not. Success Measures are NOT how you will know that the strategy has been implemented.
Strategies	A strategy describes your approach to getting things done. It is less specific than action steps but tries broadly to answer the question, "How can we get from where we are now to where we want to be?" The best strategies are those which have impact in multiple areas, also known as leverage or "bang for the buck."
Actions	The actions/activities outline the specific, concrete steps you will take to achieve each strategy. It is best to arrange these chronologically by start dates.
Person(s) Responsible	Identify by name the key person(s)/group(s)/department(s) that will lead the activity, provide support for the work, and implement the strategy.
Timeline	State the projected date of completion for each activity (e.g., Q1, Q2, Q3, or Q4 for Y1, or check Y2 and/or Y3)
Resources Needed	The, human resources, partnerships, financial, infrastructure or other resources required for successful implementation of the strategies and activities.
Monitoring/ Evaluation Approaches	The approaches you will use to track and monitor progress on strategies and activities (e.g., quarterly reports, participant evaluations from training)

[i] *Rhode Island Department of Health, Health Equity Zones (HEZ). http://www.health.ri.gov/hez*

Health Resources in Action

Advancing Public Health and Medical Research

OMB Number: 2030-0020
Expiration Date: 06/30/2024

Preaward Compliance Review Report for All Applicants and Recipients Requesting EPA Financial Assistance

Note: Read Instructions before completing form.

I. A. Applicant/Recipient (Name, Address, City, State, Zip Code)

Name: Rhode Island Department of Health

Address: 3 Capitol Hill

City: Providence

State: RI: Rhode Island Zip Code: 02908-5034

B. DUNS No. 929922664

II. Is the applicant currently receiving EPA Assistance? ☒ Yes ☐ No

III. List all civil rights lawsuits and administrative complaints pending against the applicant/recipient that allege discrimination based on race, color, national origin, sex, age, or disability. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

None

IV. List all civil rights lawsuits and administrative complaints decided against the applicant/recipient within the last year that allege discrimination based on race, color, national origin, sex, age, or disability and enclose a copy of all decisions. Please describe all corrective actions taken. (Do not include employment complaints not covered by 40 C.F.R. Parts 5 and 7.)

None

V. List all civil rights compliance reviews of the applicant/recipient conducted by any agency within the last two years and enclose a copy of the review and any decisions, orders, or agreements based on the review. Please describe any corrective action taken. (40 C.F.R. § 7.80(c)(3))

None

VI. Is the applicant requesting EPA assistance for new construction? If no, proceed to VII; if yes, answer (a) and/or (b) below.

☐ Yes ☒ No

a. If the grant is for new construction, will all new facilities or alterations to existing facilities be designed and constructed to be readily accessible to and usable by persons with disabilities? If yes, proceed to VII; if no, proceed to VI(b).

☐ Yes ☐ No

b. If the grant is for new construction and the new facilities or alterations to existing facilities will not be readily accessible to and usable by persons with disabilities, explain how a regulatory exception (40 C.F.R. 7.70) applies.

VII. Does the applicant/recipient provide initial and continuing notice that it does not discriminate on the basis of race, color, national origin, sex, age, or disability in its program or activities? (40 C.F.R 5.140 and 7.95)	☒ Yes	☐ No
a. Do the methods of notice accommodate those with impaired vision or hearing?	☒ Yes	☐ No
b. Is the notice posted in a prominent place in the applicant's offices or facilities or, for education programs and activities, in appropriate periodicals and other written communications?	☒ Yes	☐ No
c. Does the notice identify a designated civil rights coordinator?	☐ Yes	☒ No
VIII. Does the applicant/recipient maintain demographic data on the race, color, national origin, sex, age, or handicap of the population it serves? (40 C.F.R. 7.85(a))	☒ Yes	☐ No
IX. Does the applicant/recipient have a policy/procedure for providing access to services for persons with limited English proficiency? (40 C.F.R. Part 7, E.O. 13166)	☒ Yes	☐ No

X. If the applicant is an education program or activity, or has 15 or more employees, has it designated an employee to coordinate its compliance with 40 C.F.R. Parts 5 and 7? Provide the name, title, position, mailing address, e-mail address, fax number, and telephone number of the designated coordinator.

Cheryl Burrell, Associate Director
Rhode Island Department of Administration
Office of Diversity, Equity, and Opportunity (ODEO)
One Capitol Hill
Providence, Rhode Island 02909
cheryl.burrell@doa.ri.gov
Phone: 401-222-6397

XI. If the applicant is an education program or activity, or has 15 or more employees, has it adopted grievance procedures that assure the prompt and fair resolution of complaints that allege a violation of 40 C.F.R. Parts 5 and 7? Provide a legal citation or Internet Address for, or a copy of, the procedures.

Rhode Island General Laws Chapter 28-5.1:
Equal Opportunity and Affirmative Action: http://webserver.rilin.state.ri.us/Statutes/TITLE28/28-5.1/INDEX.HTM
Discrimination Complaint Procedures: http://odeo.ri.gov/offices/eco/complaint-procedures.php

For the Applicant/Recipient

I certify that the statements I have made on this form and all attachments thereto are true, accurate and complete. I acknowledge that any knowingly false or misleading statement may be punishable by fine or imprisonment or both under applicable law. I assure that I will fully comply with all applicable civil rights statutes and EPA regulations.

A. Signature of Authorized Official	B. Title of Authorized Official	C. Date
Carla Lundquist	Federal Grants Manager	03/25/2022

For the U.S. Environmental Protection Agency

I have reviewed the information provided by the applicant/recipient and hereby certify that the applicant/recipient has submitted all preaward compliance information required by 40 C.F.R. Parts 5 and 7; that based on the information submitted, this application satisfies the preaward provisions of 40 C.F.R. Parts 5 and 7; and that the applicant has given assurance that it will fully comply with all applicable civil rights statures and EPA regulations.

A. *Signature of Authorized EPA Official	B. Title of Authorized Official	C. Date

*** See Instructions**

Instructions for EPA FORM 4700-4 (Rev. 06/2014)

General. Recipients of Federal financial assistance from the U.S. Environmental Protection Agency must comply with the following statutes and regulations.
Title VI of the Civil Rights Acts of 1964 provides that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. The Act goes on to explain that the statute shall not be construed to authorize action with respect to any employment practice of any employer, employment agency, or labor organization (except where the primary objective of the Federal financial assistance is to provide employment). Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act provides that no person in the United States shall on the ground of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under the Federal Water Pollution Control Act, as amended. Employment discrimination on the basis of sex is prohibited in all such programs or activities. Section 504 of the Rehabilitation Act of 1973 provides that no otherwise qualified individual with a disability in the United States shall solely by reason of disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance. Employment discrimination on the basis of disability is prohibited in all such programs or activities. The Age Discrimination Act of 1975 provides that no person on the basis of age shall be excluded from participation under any program or activity receiving Federal financial assistance. Employment discrimination is not covered. Age discrimination in employment is prohibited by the Age Discrimination in Employment Act administered by the Equal Employment Opportunity Commission. Title IX of the Education Amendments of 1972 provides that no person in the United States on the basis of sex shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance. Employment discrimination on the basis of sex is prohibited in all such education programs or activities. Note: an education program or activity is not limited to only those conducted by a formal institution. 40 C.F.R. Part 5 implements Title IX of the Education Amendments of 1972. 40 C.F.R. Part 7 implements Title VI of the Civil Rights Act of 1964, Section 13 of the 1972 Amendments to the Federal Water Pollution Control Act, and Section 504 of The Rehabilitation Act of 1973. The Executive Order 13166 (E.O. 13166) entitled; "Improving Access to Services for Persons with Limited English Proficiency" requires Federal agencies work to ensure that recipients of Federal financial assistance provide meaningful access to their LEP applicants and beneficiaries.

Items "Applicant" means any entity that files an application or unsolicited proposal or otherwise requests EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Recipient" means any entity, other than applicant, which will actually receive EPA assistance. 40 C.F.R. §§ 5.105, 7.25. "Civil rights lawsuits and administrative complaints" means any lawsuit or administrative complaint alleging discrimination on the basis of race, color, national origin, sex, age, or disability pending or decided against the applicant and/or entity which actually benefits from the grant, but excluding employment complaints not covered by 40 C.F.R. Parts 5 and 7. For example, if a city is the named applicant but the grant will actually benefit the Department of Sewage, civil rights lawsuits involving both the city and the Department of Sewage should be listed. "Civil rights compliance review" means any review assessing the applicant's and/or recipient's compliance with laws prohibiting discrimination on the basis of race, color, national origin, sex, age, or disability. Submit this form with the original and required copies of applications, requests for extensions, requests for increase of funds, etc. Updates of information are all that are required after the initial application submission. If any item is not relevant to the project for which assistance is requested, write "NA" for "Not Applicable." In the event applicant is uncertain about how to answer any questions, EPA program officials should be contacted for clarification. * Note: Signature appears in the Approval Section of the EPA Comprehensive Administrative Review For Grants/Cooperative Agreements & Continuation/Supplemental Awards form.

EPA KEY CONTACTS FORM

OMB Number: 2030-0020
Expiration Date: 06/30/2024

Authorized Representative: *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name: Prefix: | First Name: Carla | Middle Name:
Last Name: Lundquist | Suffix:
Title: Federal Grants Manager

Complete Address:

Street1: 3 Capitol Hill
Street2:
City: Providence | State: RI: Rhode Island
Zip / Postal Code: 02908-5034 | Country: USA: UNITED STATES
Phone Number: 4012227626 | **Fax Number:**
E-mail Address: Carla.Lundquist@health.ri.gov

Payee: *Individual authorized to accept payments.*

Name: Prefix: | First Name: Alisha | Middle Name:
Last Name: Colella | Suffix:
Title: Deputy CFO, Core Finance

Complete Address:

Street1: 3 Capitol Hill
Street2:
City: Providence | State: RI: Rhode Island
Zip / Postal Code: 02908-5034 | Country: USA: UNITED STATES
Phone Number: 4012221012 | **Fax Number:**
E-mail Address: Alisha.Colella@health.ri.gov

Administrative Contact: *Individual from Sponsored Programs Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc).*

Name: Prefix: | First Name: Julie | Middle Name:
Last Name: DeMelo | Suffix:
Title: Administrator, Financial Management

Complete Address:

Street1: 3 Capitol Hill
Street2:
City: Providence | State: RI: Rhode Island
Zip / Postal Code: 02908-5034 | Country: USA: UNITED STATES
Phone Number: 4012222107 | **Fax Number:**
E-mail Address: Julie.DeMelo@health.ri.gov

EPA KEY CONTACTS FORM

Project Manager: *Individual responsible for the technical completion of the proposed work.*

Name: Prefix: | First Name: Ashley | Middle Name:

Last Name: Fogarty | Suffix:

Title: Asthma Control Program Manager

Complete Address:

Street1: 3 Capitol Hill

Street2:

City: Providence | State: RI: Rhode Island

Zip / Postal Code: 02908-5034 | Country: USA: UNITED STATES

Phone Number: 4012226272 | **Fax Number:**

E-mail Address: Ashley.Fogarty@health.ri.gov

Other Attachment File(s)

*** Mandatory Other Attachment Filename:** 1234-Asthma Strategic Plan RI.pdf

Add Mandatory Other Attachment | Delete Mandatory Other Attachment | View Mandatory Other Attachment

To add more "Other Attachment" attachments, please use the attachment buttons below.

Add Optional Other Attachment | Delete Optional Other Attachment | View Optional Other Attachment

Project Narrative File(s)

*** Mandatory Project Narrative File Filename:** 1241-Project Narrative Final.pdf

Add Mandatory Project Narrative File | Delete Mandatory Project Narrative File | View Mandatory Project Narrative File

To add more Project Narrative File attachments, please use the attachment buttons below.

Add Optional Project Narrative File | Delete Optional Project Narrative File | View Optional Project Narrative File

OMB Number: 4040-0004
Expiration Date: 12/31/2022

Application for Federal Assistance SF-424

* 1. Type of Submission:
- [ ] Preapplication
- [x] Application
- [ ] Changed/Corrected Application

* 2. Type of Application:
- [x] New
- [ ] Continuation
- [ ] Revision

* If Revision, select appropriate letter(s):

* Other (Specify):

* 3. Date Received: 03/25/2022

4. Applicant Identifier:

5a. Federal Entity Identifier:

5b. Federal Award Identifier:

State Use Only:

6. Date Received by State:

7. State Application Identifier:

8. APPLICANT INFORMATION:

* a. Legal Name: Rhode Island Department of Health

* b. Employer/Taxpayer Identification Number (EIN/TIN): 056000522

* c. Organizational DUNS: 9299226640000

d. Address:

* Street1: 3 Capitol Hill
Street2:
* City: Providence
County/Parish:
* State: RI: Rhode Island
Province:
* Country: USA: UNITED STATES
* Zip / Postal Code: 02908-5034

e. Organizational Unit:

Department Name: RI Department of Health

Division Name: Community Health and Equity

f. Name and contact information of person to be contacted on matters involving this application:

Prefix:
* First Name: Tricia
Middle Name:
* Last Name: Washburn
Suffix:

Title: Chief, Center for Preventive Services

Organizational Affiliation: Rhode Island Department of Health

* Telephone Number: 401-222-5922
Fax Number:

* Email: Tricia.Washburn@health.ri.gov

Application for Federal Assistance SF-424

*** 9. Type of Applicant 1: Select Applicant Type:**

A: State Government

Type of Applicant 2: Select Applicant Type:

Type of Applicant 3: Select Applicant Type:

* Other (specify):

*** 10. Name of Federal Agency:**

Environmental Protection Agency

11. Catalog of Federal Domestic Assistance Number:

66.034

CFDA Title:

Surveys, Studies, Research, Investigations, Demonstrations, and Special Purpose Activities Relating to the Clean Air Act

*** 12. Funding Opportunity Number:**

EPA-OAR-OAQPS-22-01

* Title:

Enhanced Air Quality Monitoring for Communities

13. Competition Identification Number:

Title:

14. Areas Affected by Project (Cities, Counties, States, etc.):

Add Attachment | Delete Attachment | View Attachment

*** 15. Descriptive Title of Applicant's Project:**

Monitoring Indoor and Outdoor Air Quality for Communities Affected by Asthma in Providence RI

Attach supporting documents as specified in agency instructions.

Add Attachments | Delete Attachments | View Attachments

Application for Federal Assistance SF-424

16. Congressional Districts Of:

* a. Applicant: RI-002 * b. Program/Project: RI-ALL

Attach an additional list of Program/Project Congressional Districts if needed.

Add Attachment | Delete Attachment | View Attachment

17. Proposed Project:

* a. Start Date: 11/01/2022 * b. End Date: 10/31/2025

18. Estimated Funding ($):

* a. Federal	500,000.00
* b. Applicant	0.00
* c. State	0.00
* d. Local	0.00
* e. Other	0.00
* f. Program Income	0.00
* g. TOTAL	500,000.00

*** 19. Is Application Subject to Review By State Under Executive Order 12372 Process?**

☐ a. This application was made available to the State under the Executive Order 12372 Process for review on .

☐ b. Program is subject to E.O. 12372 but has not been selected by the State for review.

☒ c. Program is not covered by E.O. 12372.

*** 20. Is the Applicant Delinquent On Any Federal Debt? (If "Yes," provide explanation in attachment.)**

☐ Yes ☒ No

If "Yes", provide explanation and attach

Add Attachment | Delete Attachment | View Attachment

21. *By signing this application, I certify (1) to the statements contained in the list of certifications and (2) that the statements herein are true, complete and accurate to the best of my knowledge. I also provide the required assurances** and agree to comply with any resulting terms if I accept an award. I am aware that any false, fictitious, or fraudulent statements or claims may subject me to criminal, civil, or administrative penalties. (U.S. Code, Title 218, Section 1001)**

☒ ** I AGREE

** The list of certifications and assurances, or an internet site where you may obtain this list, is contained in the announcement or agency specific instructions.

Authorized Representative:

Prefix:	
* First Name:	Carla
Middle Name:	
* Last Name:	Lundquist
Suffix:	
* Title:	Federal Grants Manager
* Telephone Number:	4012227626
Fax Number:	
* Email:	Carla.Lundquist@health.ri.gov
* Signature of Authorized Representative:	Carla Lundquist
* Date Signed:	03/25/2022

BUDGET INFORMATION - Non-Construction Programs

OMB Number: 4040-0006
Expiration Date: 02/28/2022

SECTION A - BUDGET SUMMARY

Grant Program Function or Activity (a)	Catalog of Federal Domestic Assistance Number (b)	Estimated Unobligated Funds		New or Revised Budget		
		Federal (c)	Non-Federal (d)	Federal (e)	Non-Federal (f)	Total (g)
1. Enhanced Air Quality Monitoring for Communities	66.034	$	$	$ 500,000.00	$	$ 500,000.00
2.						
3.						
4.						
5. Totals		$	$	$ 500,000.00	$	$ 500,000.00

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Prescribed by OMB (Circular A -102) Page 1

SECTION B - BUDGET CATEGORIES

6. Object Class Categories	GRANT PROGRAM, FUNCTION OR ACTIVITY (1) Enhanced Air Quality Monitoring for Communities	(2)	(3)	(4)	Total (5)
a. Personnel	$ 44,403.00	$	$	$	$ 44,403.00
b. Fringe Benefits	28,924.00				28,924.00
c. Travel	351.00				351.00
d. Equipment	42,100.00				42,100.00
e. Supplies	6,014.00				6,014.00
f. Contractual	324,000.00				324,000.00
g. Construction	0.00				0.00
h. Other	31,798.00				31,798.00
i. Total Direct Charges (sum of 6a-6h)	477,590.00				$ 477,590.00
j. Indirect Charges	22,410.00				$ 22,410.00
k. TOTALS (sum of 6i and 6j)	$ 500,000.00	$	$	$	$ 500,000.00
7. Program Income	$	$	$	$	$

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SECTION C - NON-FEDERAL RESOURCES

(a) Grant Program	(b) Applicant	(c) State	(d) Other Sources	(e)TOTALS
8. Enhanced Air Quality Monitoring for Communities	$	$	$	$
9.				
10.				
11.				
12. TOTAL (sum of lines 8-11)	$	$	$	$

SECTION D - FORECASTED CASH NEEDS

	Total for 1st Year	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
13. Federal	$ 500,000.00	$ 125,000.00	$ 125,000.00	$ 125,000.00	$ 125,000.00
14. Non-Federal	$				
15. TOTAL (sum of lines 13 and 14)	$ 500,000.00	$ 125,000.00	$ 125,000.00	$ 125,000.00	$ 125,000.00

SECTION E - BUDGET ESTIMATES OF FEDERAL FUNDS NEEDED FOR BALANCE OF THE PROJECT

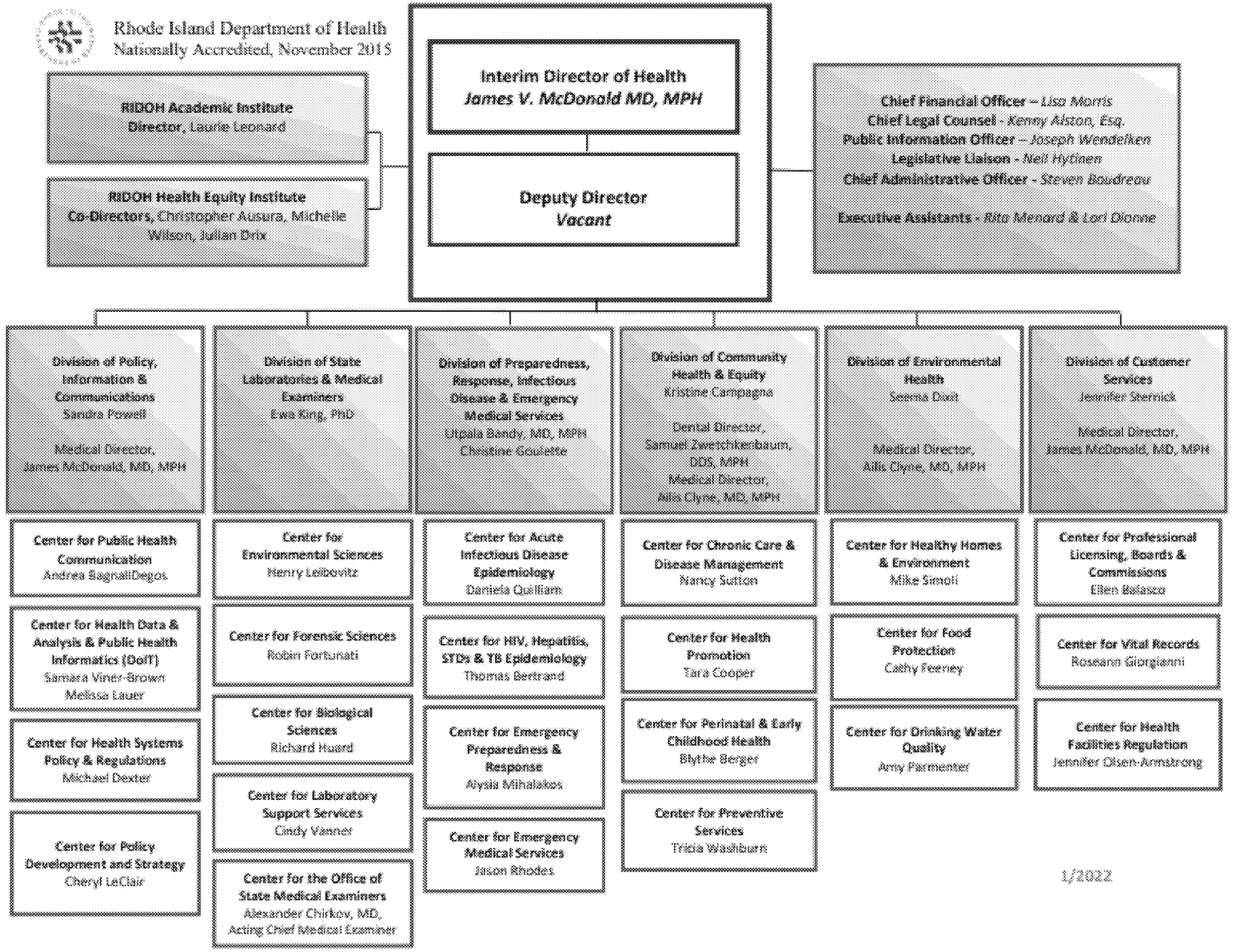
(a) Grant Program	FUTURE FUNDING PERIODS (YEARS) (b)First	(c) Second	(d) Third	(e) Fourth
16. Enhanced Air Quality Monitoring for Communities	$	$	$	$
17.				
18.				
19.				
20. TOTAL (sum of lines 16 - 19)	$	$	$	$

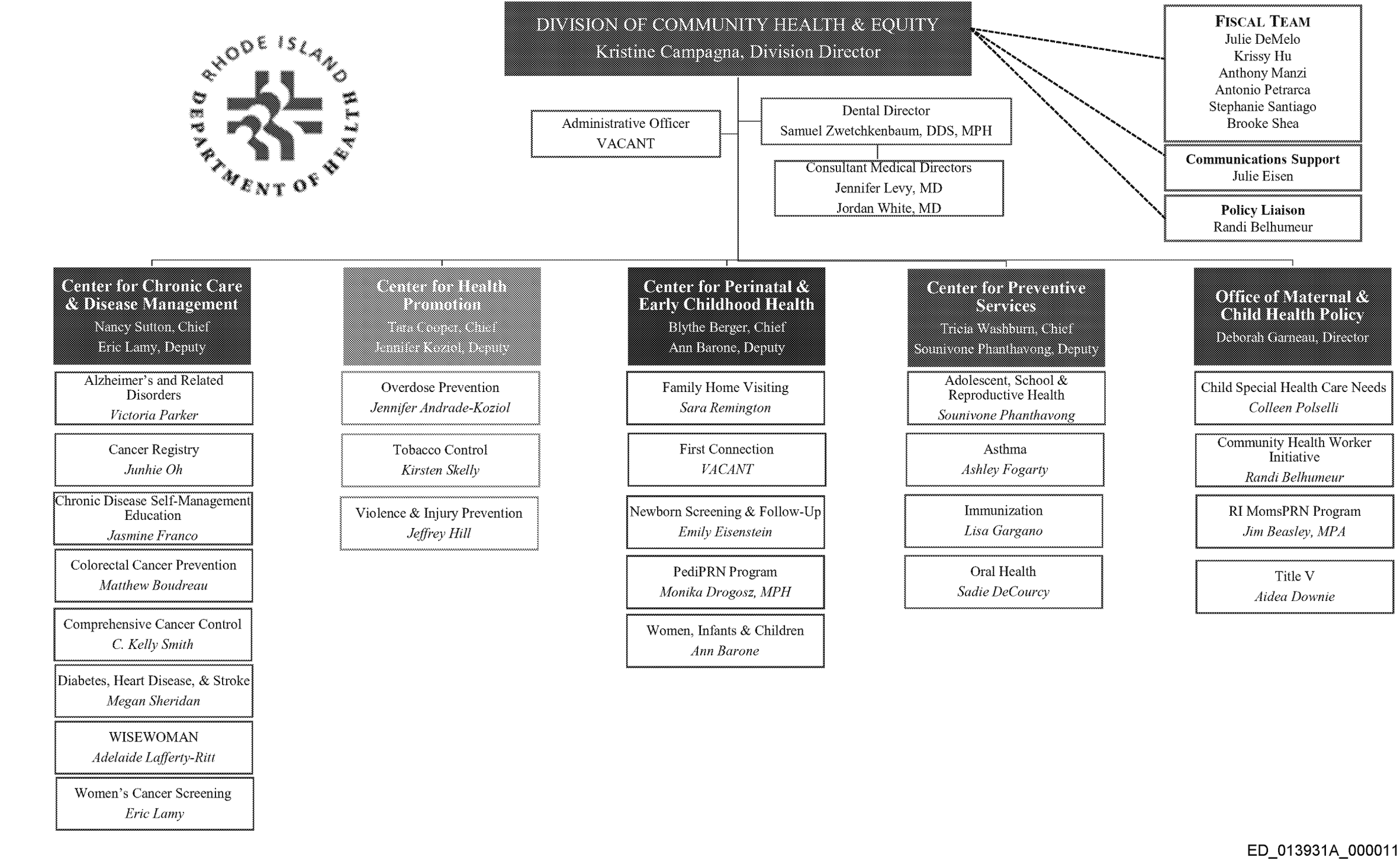
SECTION F - OTHER BUDGET INFORMATION

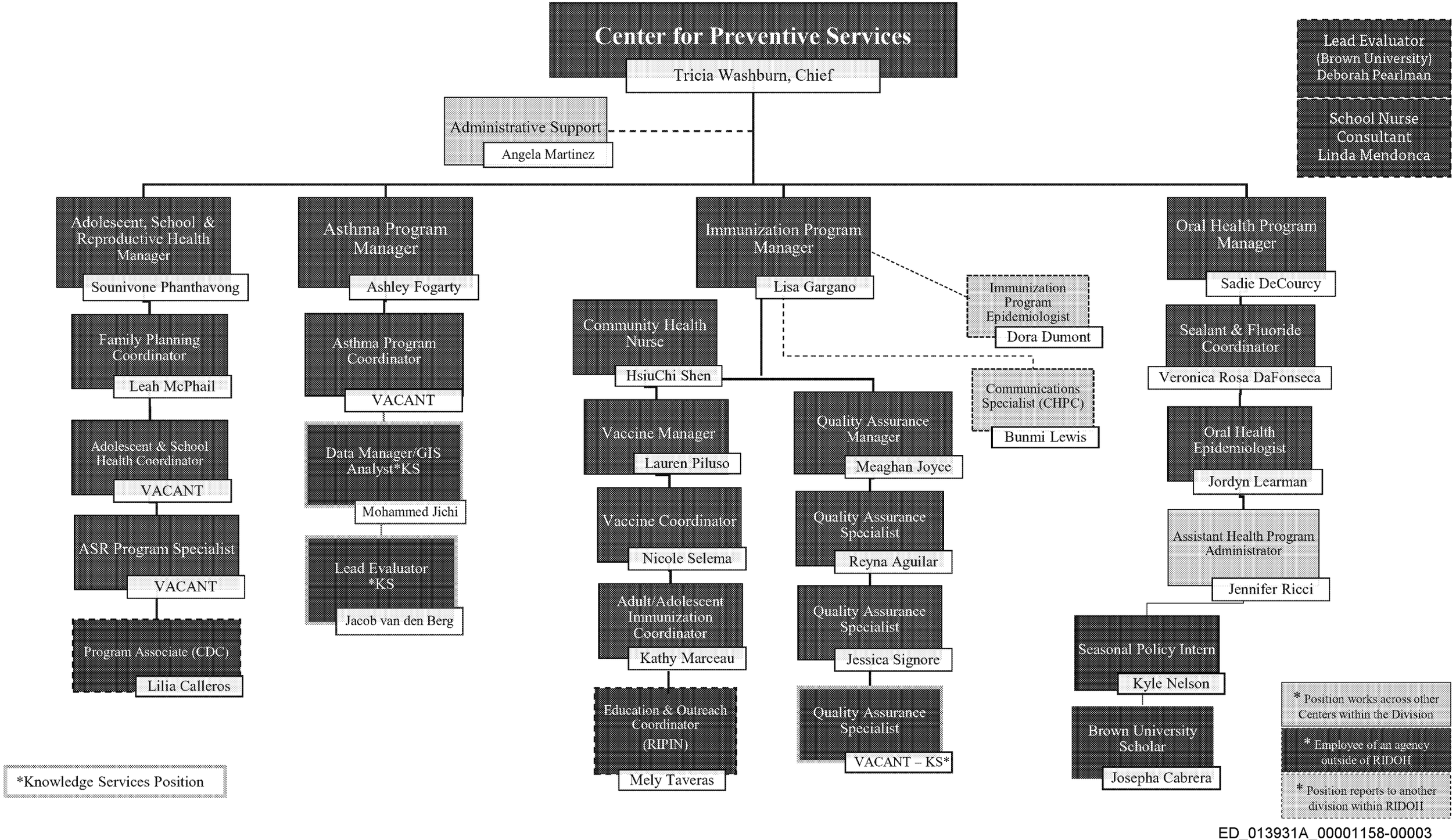
21. Direct Charges: $477,590.00

22. Indirect Charges: $22,410.00

23. Remarks: Indirect costs are calculated at 20.1% of direct costs less equipment and contractual (subaward) items. See attached federal indirect cost rate agreement for the Rhode Island Department of Health.


Rhode Island Department of Health
Nationally Accredited, November 2015
RIDOH Academic Institute
Director, Laurie Leonard
RIDOH Health Equity Institute
Co-Directors, Christopher Ausura, Michelle Wilson, Julian Drix
Interim Director of Health
James V. McDonald MD, MPH
Deputy Director
Vacant
Chief Financial Officer – Lisa Morris
Chief Legal Counsel - Kenny Alston, Esq.
Public Information Officer – Joseph Wendelken
Legislative Liaison - Neil Hytinen
Chief Administrative Officer - Steven Boudreau
Executive Assistants - Rita Menard & Lori Dionne
Division of Policy, Information & Communications
Sandra Powell
Medical Director, James McDonald, MD, MPH
Division of State Laboratories & Medical Examiners
Ewa King, PhD
Division of Preparedness, Response, Infectious Disease & Emergency Medical Services
Utpala Bandy, MD, MPH
Christine Goulette
Division of Community Health & Equity
Kristine Campagna
Dental Director, Samuel Zwetchkenbaum, DDS, MPH
Medical Director, Ailis Clyne, MD, MPH
Division of Environmental Health
Seema Dixit
Medical Director, Ailis Clyne, MD, MPH
Division of Customer Services
Jennifer Stemick
Medical Director, James McDonald, MD, MPH
Center for Public Health Communication
Andrea BagnallDegos
Center for Health Data & Analysis & Public Health Informatics (DoIT)
Samara Viner-Brown
Melissa Lauer
Center for Health Systems Policy & Regulations
Michael Dexter
Center for Policy Development and Strategy
Cheryl LeClair
Center for Environmental Sciences
Henry Leibovitz
Center for Forensic Sciences
Robin Fortunati
Center for Biological Sciences
Richard Huard
Center for Laboratory Support Services
Cindy Vanner
Center for the Office of State Medical Examiners
Alexander Chirkov, MD, Acting Chief Medical Examiner
Center for Acute Infectious Disease Epidemiology
Daniela Quilliam
Center for HIV, Hepatitis, STDs & TB Epidemiology
Thomas Bertrand
Center for Emergency Preparedness & Response
Alysia Mihalakos
Center for Emergency Medical Services
Jason Rhodes
Center for Chronic Care & Disease Management
Nancy Sutton
Center for Health Promotion
Tara Cooper
Center for Perinatal & Early Childhood Health
Blythe Berger
Center for Preventive Services
Tricia Washburn
Center for Healthy Homes & Environment
Mike Simoli
Center for Food Protection
Cathy Feeney
Center for Drinking Water Quality
Amy Parmenter
Center for Professional Licensing, Boards & Commissions
Ellen Balasco
Center for Vital Records
Roseann Giorgianni
Center for Health Facilities Regulation
Jennifer Olsen-Armstrong
1/2022


DIVISION OF COMMUNITY HEALTH & EQUITY
Kristine Campagna, Division Director
Administrative Officer
VACANT
Dental Director
Samuel Zwetchkenbaum, DDS, MPH
Consultant Medical Directors
Jennifer Levy, MD
Jordan White, MD
FISCAL TEAM
Julie DeMelo
Krissy Hu
Anthony Manzi
Antonio Petrarca
Stephanie Santiago
Brooke Shea
Communications Support
Julie Eisen
Policy Liaison
Randi Belhumeur
Center for Chronic Care & Disease Management
Nancy Sutton, Chief
Eric Lamy, Deputy
Alzheimer's and Related Disorders
Victoria Parker
Cancer Registry
Junhie Oh
Chronic Disease Self-Management Education
Jasmine Franco
Colorectal Cancer Prevention
Matthew Boudreau
Comprehensive Cancer Control
C. Kelly Smith
Diabetes, Heart Disease, & Stroke
Megan Sheridan
WISEWOMAN
Adelaide Lafferty-Ritt
Women's Cancer Screening
Eric Lamy
Center for Health Promotion
Tara Cooper, Chief
Jennifer Koziol, Deputy
Overdose Prevention
Jennifer Andrade-Koziol
Tobacco Control
Kirsten Skelly
Violence & Injury Prevention
Jeffrey Hill
Center for Perinatal & Early Childhood Health
Blythe Berger, Chief
Ann Barone, Deputy
Family Home Visiting
Sara Remington
First Connection
VACANT
Newborn Screening & Follow-Up
Emily Eisenstein
PediPRN Program
Monika Drogosz, MPH
Women, Infants & Children
Ann Barone
Center for Preventive Services
Tricia Washburn, Chief
Sounivone Phanthavong, Deputy
Adolescent, School & Reproductive Health
Sounivone Phanthavong
Asthma
Ashley Fogarty
Immunization
Lisa Gargano
Oral Health
Sadie DeCourcy
Office of Maternal & Child Health Policy
Deborah Garneau, Director
Child Special Health Care Needs
Colleen Polselli
Community Health Worker Initiative
Randi Belhumeur
RI MomsPRN Program
Jim Beasley, MPA
Title V
Aidea Downie



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STATE AND LOCAL GOVERNMENTS RATE AGREEMENT

EIN: 1056000522A5

ORGANIZATION:
Rhode Island Department of Health
Three Capitol Hill
Providence, RI 02908

DATE:11/02/2021

FILING REF.: The preceding agreement was dated 08/28/2020

The rates approved in this agreement are for use on grants, contracts and other agreements with the Federal Government, subject to the conditions in Section III.

SECTION I: INDIRECT COST RATES

RATE TYPES: FIXED FINAL PROV. (PROVISIONAL) PRED. (PREDETERMINED)

	EFFECTIVE PERIOD				
TYPE	**FROM**	**TO**	**RATE(%)**	**LOCATION**	**APPLICABLE TO**
FIXED	07/01/2021	06/30/2022	20.10	All	All Programs
PROV.	07/01/2022	06/30/2024			Use same rates and conditions as those cited for fiscal year ending June 30, 2022.

*BASE

Total direct costs excluding capital expenditures (buildings, individual items of equipment; alterations and renovations), subawards and flow-through funds.

SECTION II: SPECIAL REMARKS

TREATMENT OF FRINGE BENEFITS:

Fringe benefits applicable to direct salaries and wages are treated as direct costs.

TREATMENT OF PAID ABSENCES

Vacation, holiday, sick leave pay and other paid absences are included in salaries and wages and are claimed on grants, contracts and other agreements as part of the normal cost for salaries and wages. Separate claims are not made for the cost of these paid absences.

The proposal based on actual costs for the fiscal year ended June 30, 2021 is due by December 31, 2021. Please submit to CAS-NY@psc.hhs.gov.

Equipment means tangible personal property (including information technology systems) having a useful life of more than one year and a per-unit acquisition cost which equals or exceeds $5,000.

SECTION III: GENERAL

A. LIMITATIONS:

The rates in this Agreement are subject to any statutory or administrative limitations and apply to a given grant, contract or other agreement only to the extent that funds are available. Acceptance of the rates is subject to the following conditions: (1) Only costs incurred by the organization were included in its indirect cost pool as finally accepted: such costs are legal obligations of the organization and are allowable under the governing cost principles; (2) The same costs that have been treated as indirect costs are not claimed as direct costs; (3) Similar types of costs have been accorded consistent accounting treatment; and (4) The information provided by the organization which was used to establish the rates is not later found to be materially incomplete or inaccurate by the Federal Government. In such situations the rate(s) would be subject to renegotiation at the discretion of the Federal Government.

B. ACCOUNTING CHANGES:

This Agreement is based on the accounting system purported by the organization to be in effect during the Agreement period. Changes to the method of accounting for costs which affect the amount of reimbursement resulting from the use of this Agreement require prior approval of the authorized representative of the cognizant agency. Such changes include, but are not limited to, changes in the charging of a particular type of cost from indirect to direct. Failure to obtain approval may result in cost disallowances.

C. FIXED RATES:

If a fixed rate is in this Agreement, it is based on an estimate of the costs for the period covered by the rate. When the actual costs for this period are determined, an adjustment will be made to a rate of a future year(s) to compensate for the difference between the costs used to establish the fixed rate and actual costs.

D. USE BY OTHER FEDERAL AGENCIES:

The rates in this Agreement were approved in accordance with the authority in Title 2 of the Code of Federal Regulations, Part 200 (2 CFR 200), and should be applied to grants, contracts and other agreements covered by 2 CFR 200, subject to any limitations in A above. The organization may provide copies of the Agreement to other Federal Agencies to give them early notification of the Agreement.

E. OTHER:

If any Federal contract, grant or other agreement is reimbursing indirect costs by a means other than the approved rate(s) in this Agreement, the organization should (1) credit such costs to the affected programs, and (2) apply the approved rate(s) to the appropriate base to identify the proper amount of indirect costs allocable to these programs.

BY THE INSTITUTION:	ON BEHALF OF THE FEDERAL GOVERNMENT:
Rhode Island Department of Health	DEPARTMENT OF HEALTH AND HUMAN SERVICES
(INSTITUTION)	(AGENCY) Darryl W. Mayes -S Digitally signed by Darryl W. Mayes -S DN: c=US, o=U.S. Government, ou=HHS, ou=PSC, ou=People, 0.9.2342.19200300.100.1.1=2000131669, cn=Darryl W. Mayes -S Date: 2021.11.09 08:29:21 -05'00'
Lori Zelano (SIGNATURE)	(SIGNATURE)
Lori Zelano (NAME)	Darryl W. Mayes (NAME)
Chief Financial Officer (TITLE)	Deputy Director, Cost Allocation Services (TITLE)
11/18/2021 (DATE)	11/2/2021 (DATE) 5724

HHS REPRESENTATIVE: A. Sugrim-Singh

Telephone: (212) 264-2069

School of Public Health
BROWN UNIVERSITY

BEHAVIORAL AND SOCIAL SCIENCES

Michelle L. Rogers, PhD
Assistant Professor (Research)
Associate Director, Survey Research Center

March 10, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

I wish to express my support for the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS- 22-01, *Enhanced Air Quality Monitoring for Communities*.

I look forward to continuing my close collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. As you know, I am a co-Investigator on the Institutional Review Board-approved project "Medicaid Asthma 'Hot Spot' Analysis and Evaluation of the Home Asthma Response Program" and work with you and the team on analyzing and mapping pediatric asthma prevalence and hospital utilization in Rhode Island using Medicaid claims. I am committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. I also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, I support RIACP in asthma management and control among Rhode Islanders. I envision partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

I am committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Michelle L. Rogers, PhD
Assistant Professor (Research), Behavioral and Social Sciences, Brown University School of Public Health Associate Director, Survey Research Center, Brown University School of Public Health

Brown University School of Public Health ◘ Box 1886, Providence, RI 02912 ◘ 401-863-3667 ◘
Michelle_Rogers@brown.edu

Department of Health

Three Capitol Hill
Providence, RI 02908-5097

TTY: 711
www.health.ri.gov

March 7, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

The Rhode Island Department of Health (RIDOH) Center for Public Health Communication (CPHC) is thrilled to support RIDOH's application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

CPHC looks forward to continuing our strong collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to improve air quality and reduce asthma in Rhode Island. CPHC provides strategic guidance and assistance to RIDOH programs as they develop public health communications and ensures that every piece of information disseminated by RIDOH clearly reflects the Department's goals, values, and priorities. We are committed to supporting RIACP's communication needs as it works to improve air quality and reduce the burden of asthma for communities disproportionately affected by asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma.

CPHC envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. This includes ensuring clear, effective communications and outreach with schools, community-based organizations, and families living in public housing developments about the indoor air quality project proposed in this application and its results.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Andrea Bagnall Degos, MPH
Communications Director
Center for Public Health Communication Rhode Island
Department of Health

State of Rhode Island

RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL
MANAGEMENT
Office Air Resources
235 Promenade Street, Room 330
Providence, Rhode Island 02908

March 14, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the RI Department of Environmental Management, Office of Air Resources, (RIDEM OAR) we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

RIDEM OAR looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. The RIDEM OAR and RIACP have the shared goal of working to understand the quality of the air that our citizens breath, especially people living in environmental justice focus areas, where indications are they are exposed to a disproportionate burden of pollution from sources such as highways, ports, and industrial facilities.

We are both committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, RIDEM OAR supports RIACP in asthma management and control among Rhode Islanders.

RIDEM OAR envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders.

This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Karen Slattery

Digitally signed by Karen SlatteryDN: cn=Karen Slattery, o=RIDEM,ou=Office of Air Resources, email=karen.slattery@dem.ri.gov, c=US
Date: 2022.03.14 15:24:43 -04'00'

Karen Slattery

Deputy Administrator
Environmental Protection
RIDEM, Office of Air Resources

CARE TRANSFORMATION COLLABORATIVE RHODE ISLAND

pcmh kids patient-centered medical home

ADVANCING INTEGRATED HEALTHCARE

March 7, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the Care Transformation Collaborative of Rhode Island, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

The Care Transformation Collaborative of RI looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. CTC-RI has successfully partnered with the RIACP in working together to operationalize the RIDOH strategic goals through forming a Core Planning Team that will help to develop and implement a learning collaborative to improve asthma outcomes in our state. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, CTC-RI supports RIACP in asthma management and control among Rhode Islanders.

CTC-RI envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Alba Hurwitz

CTC-RI Executive Director

Family Service
OF RHODE ISLAND

March 16, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control ProgramCenter for
Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the South Providence 02905 Health Equity Zone, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

South Providence 02905 HEZ looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, South Providence 02905 HEZ supports RIACP in asthma management and control among Rhode Islanders.

South Providence 02905 HEZ envisions partnering with RIACP to further promote one of the Rhode IslandAsthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbatingasthma.

Sincerely,

South Providence 02905 HEZ Steering Committee
Supported by Family Service of Rhode Island, Backbone Agency

Department of Health

Three Capitol Hill
Providence, RI 02908-5097

TTY:711

www.health.ri.gov

March 1, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the Center for Health Data and Analysis (CHDA), I am pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

CHDA looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. We maintain several datasets and initiatives that include data and information relevant to asthma. Examples include our integrated child health information system, KIDSNET; population-based surveys (e.g., Behavioral Risk Factor Surveillance System, Youth Risk Behavior Survey, and Pregnancy Risk Assessment Monitoring System); Hospital Discharge Data (inpatient hospitalizations, emergency department visits and observation stays); Geographic Information Systems (GIS); etc.

We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, CHDA supports RIACP in asthma management and control among Rhode Islanders.

CHDA envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow

State of Rhode Island

Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Samara Viner-Brown, MS
Chief, Center for Health Data and Analysis
Telephone: 401-222-5122
Email: samara.vinerbrown@health.ri.gov

State of Rhode Island

RIHSC

Rhode Island Healthy Schools Coalition

www.rihsc.org

March 1, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of Rhode Island Healthy Schools Coalition, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22 -01, *Enhanced Air Quality Monitoring for Communities.*

RI Healthy Schools Coalition looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. RIHSC has successfully partnered with RODOH on many projects to improve the health environment of schools by providing resources and technical assistance to district wellness committees, leadership and staff. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma and support RIACP in asthma management and control among Rhode Islanders.

RIHSC envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders . This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Karin Wetherill
Co-Director

Karin Wetherill, Co-Director
karin.wetherill@rihsc.org / 401-339-2524

Jane Vergnani, Co-Chair
jvergnani@newenglanddairy.com

Kelly Swanson, Co-Director
kelly.swanson@rihsc.org / 401-529-4458

Mary Anne Roll, Co-Chair
maroll0321@gmail.com

RHODE ISLAND COLLEGE
SCHOOL OF NURSING

March 2, 2022
Ashley Fogarty, MPH
Rhode Island Asthma Control Program - Program Manager
Center for Preventive Services - Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

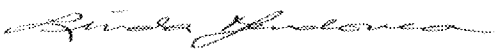
Dear Ms. Fogarty:

On behalf of the Zvart Onanian School of Nursing at RI College, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

The Onanian School of Nursing looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, the school of nursing supports RIACP in asthma management and control among Rhode Islanders.

The Onanian School of Nursing at RI College envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.
Sincerely,



Linda Mendonca, DNP, MEd, RN, PHNA-BC, NCSN, FNASN
Assistant Professor - Public/Community Health Nursing
lmendonca@ric.edu Mobile – 401-374-2179

March 15, 2022

Ashley Fogarty, MPH Program Manager
Rhode Island Asthma Control Program Center for Preventive Services
Division of Community Health and Equity Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

As the backbone organization working with the Department of Health to establish a Health Equity Zone (HEZ) in the 02907 zip code in Providence, the West Elmwood Housing Development Corporation (WEHDC) is very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities.*

WEHDC looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. As you know, WEHDC is currently leading the Rhode to Equity Initiative in Providence's 02907 zip code. The goal of our Initiative is to decrease disparities in the prevalence of asthma related ER and inpatient hospitalizations, and we seek to decrease hospitalizations by 50% over the next 3 years. A key strategy of ours is to monitor and improve air quality with the 02907 zip code. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, WEHDC supports RIACP in asthma management and control among Rhode Islanders.

WEHDC envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode [slanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. As part of our work together on this initiative, we will be happy to coordinate activities with both our partners and our Community Health Worker staff to achieve our mutual goals.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Candace Harper
Deputy Director

American Lung Association.

March 7, 2022

Ashley Fogarty, MPH
Program Manager, Rhode Island Asthma Control Program
Center for Preventive Services | Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408, Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the American Lung Association, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA *Enhanced Air Quality Monitoring for Communities*.

The American Lung Association is the oldest voluntary public health organization in the United States, and we represent the 37 million Americans living with or at risk for lung diseases including asthma, lung cancer and COPD, that includes nearly a quarter million Rhode Islanders. We know that when you cannot breathe nothing else matters.

For 22 years, the American Lung Association has analyzed data from official air quality monitors to compile the State of the Air report. We believe that the more you learn about the air you breathe, the more you can protect your health and take steps to make the air cleaner and healthier. Today, there are too many Rhode Island communities impacted by harmful air pollution. In our 2021 State of the Air report[1], that studies local air pollution across the United States, all Rhode Island counties earned an "F" grade for ozone pollution. Reduction of harmful pollutants caused by burning fossil fuels is critical to improving local health today and ensuring a stable climate for future generations. Climate change is first and foremost a public health issue, and one that creates disproportionate impacts across Rhode Island's diverse communities. Further, climate change is making the job of cleaning our air much more difficult as temperatures rise and drive conditions for unhealthy ozone pollution days, among other health challenges.

The American Lung Association looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma.

[1] State of the Air Report 2021 | https://www.lung.org/research/sota/city-rankings/states/rhode-island

Additionally, the American Lung Association supports RIACP in asthma management and control among Rhode Islanders.

The American Lung Association envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Daniel Fitzgerald, MPH, ICPS
National Senior Manager, Advocacy
Senior Manager, Advocacy in Rhode Island
American Lung Association
260 W. Exchange Street, Suite 102B | Providence, RI 02903
Daniel.Fitzgerald@Lung.org | 401-533-5176

Yale SCHOOL OF PUBLIC HEALTH
Department of Environmental Health Sciences

March 17, 2022

KRYSTAL POLLITT, PH.D., P.ENG.
Assistant Professor

PO Box 208034
New Haven CT 06520-8034
T 203 737-1444
F 203 737-6023
krystal.pollitt@yale.edu
publichealth.yale.edu

courier
Environmental Health Sciences
LEPH
Room 444
New Haven CT 06520

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty,

I am pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, Enhanced Air Quality Monitoring for Communities.

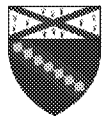
I am an Assistant Professor in the Department of Environmental Health Sciences at the Yale School of Public Health and hold a cross-appointment in the Department of Chemical and Environmental Engineering. My PhD explored the impact of short-term air pollutant exposure on cardiorespiratory health as part a collaborative project with King's College London, University of Birmingham, Utrecht University and the Dutch National Institute for Public Health and the Environment. I was subsequently awarded a Canadian Thoracic Society Postdoctoral Research Fellowship focused on characterizing personal exposure to complex environmental exposures and their impact on respiratory health. My current research combines my interests and expertise in exposure science and analytical chemistry and aims to understand the health effects of indoor and outdoor pollutants using novel sensor technology. *This proposal expands on my experience establishing air monitoring networks using low-cost sensors in Massachusetts created with the objective of building community capacity, leadership and collaboration on air quality, climate resilience, environmental justice, and health equity.*

I look forward to collaborating with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. I are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. I also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, I support RIACP in asthma management and control among Rhode Islanders.

Through the proposed project, RIACP will further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

As a project partner, I commit to participate in the following activities over the three-year project period:

- Calibrate Purple Air low-cost air sensors in RI
- Create an interactive map visualizing calibrated low-cost air sensor data to share real-time information with communities



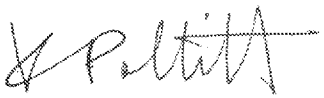
Through the proposed project, RIACP will further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

As a project partner, I commit to participate in the following activities over the three-year project period:

- Calibrate Purple Air low-cost air sensors in RI
- Create an interactive map visualizing calibrated low-cost air sensor data to share real-time information with communities

I am committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,



Krystal Pollitt, Ph.D., P.Eng.
Assistant Professor
Yale School of Public Health
Yale School of Engineering and Applied Science

ONE
NEIGHBORHOOD
BUILDERS

March 17, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the Central Providence Opportunities Health Equity Zone (CPO-HEZ) we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

ONE Neighborhood Builders, the backbone agency for CPO-HEZ, looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, ONE Neighborhood Builders supports RIACP in asthma management and control among Rhode Islanders.

ONE Neighborhood Builders envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,
Jennifer Hawkins

Executive Director
ONE Neighborhood Builders

Hasbro Children's Hospital
The Pediatric Division of Rhode Island Hospital
Lifespan. Delivering health with care.

Bradley Hasbro Research Center
One Hoppin Street
Providence, RI 02903
Tel 401 444-8945
Fax 401 444-8742
dkonisemitchell@lifespan.org
Daphne_Konis-Mitchell@brown.edu

Daphne Konis-Mitchell, PhD
Vice Chair of Research
Director, Community Asthma Program
Department of Pediatrics
Hasbro Children's Hospital

Professor (Research)
Department of Pediatrics
Division of Biology and Medicine
Department of Psychiatry and Human Behavior
The Warren Alpert Medical School of Brown University

February 28, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the Community Asthma Program at the Department of Pediatrics, Hasbro Children's Hospital, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities.*

The Community Asthma Program looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. Our successful partnership involving addressing the asthma management needs to improve control among urban children residing in high-risk communities in Greater Providence has led to direct improvements in children's asthma control. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, the Community Asthma Program supports RIACP in asthma management and control among Rhode Islanders through the dissemination in our evidenced-based asthma management educational programs.

The Community Asthma Program looks forward to partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode

Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Daphne Koinis Mitchell, Ph.D
Professor, Departments of Pediatrics and Psychiatry
Vice Chair of Research, Department of Pediatrics
The Warren Alpert Medical School of Brown University
Director, Community Asthma Program
Hasbro Children's Hospital, Providence RI

Health Resources in Action
Advancing Public Health and Medical Research

[redacted]

March 21, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of Health Resources in Action (HRiA), we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

HRiA looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island – through two avenues. First, we organize the Asthma Regional Council of New England (ARC) – and will support dissemination of this project across New England, and secondly, if our project, the MA Healthy Air Network, is funded under EPA-OAR-OAQPS-22-01 – we will include RI sensors in our universal platform. We have a long history working with RIACP, included as a partner in a $4M Centers for Medicare and Medicaid Innovation Award. They are a valuable partners and we are committed to working together to improve air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma.

Again, HRiA wholeheartedly supports RIDOH's application, and is committed to supporting their efforts. If you have questions, please contact me at 617-279-2236 or schacker@hria.org. Thank you for your consideration.

Sincerely,

Stacey Chacker

Stacey Chacker
Director, Policy and Practice

PROVIDENCE HOUSING AUTHORITY

ADMINISTRATION OFFICES
100 BROAD STREET
PROVIDENCE, RI 02903

March 17, 2022

Ashley Fogarty, MPH
Program Manager
Rhode Island Asthma Control Program
Center for Preventive Services
Division of Community Health and Equity
Rhode Island Department of Health
3 Capitol Hill, Room 408
Providence, RI 02908

Dear Ms. Fogarty:

On behalf of the Providence Housing Authority, we are very pleased to support the Rhode Island Department of Health's (RIDOH) application to the Environmental Protection Agency (EPA) in response to Funding Opportunity Number: EPA-OAR-OAQPS-22-01, *Enhanced Air Quality Monitoring for Communities*.

Providence Housing Authority looks forward to ongoing collaboration with the Rhode Island Asthma Control Program (RIACP) and its partners to address air quality and asthma in Rhode Island. Providence Housing Authority is committed to the health and safety of its residents and looks forward to working with RIDOH to learn how to better protect its residents from environmental hazards. We are committed to improving air quality and reducing the burden of asthma for communities disproportionately affected by asthma and air pollution by advocating for air quality monitoring within these areas with a high burden of asthma and air pollution. We also support RIACP in advocating for and disseminating the results of air quality monitoring among communities with a high burden of asthma. Additionally, Providence Housing Authority supports RIACP in asthma management and control among Rhode Islanders.

Providence Housing Authority envisions partnering with RIACP to further promote one of the Rhode Island Asthma Strategic Plan goals to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality.

We are committed to working with RIACP to achieve the common goals of reducing disparities and improving the health outcomes of Rhode Islanders. This funding opportunity will allow Rhode Island to address environmental triggers that have been shown to increase the risk of developing and exacerbating asthma.

Sincerely,

Lydia McCoy
Strategy and Development Manager
Providence Housing Authority

Main Office
(401) 751-6400

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Environmental Protection Agency
2022 Enhanced Air Quality Monitoring for Communities
EPA-OAR-OAQPS-22-01

Project Title: *Monitoring Indoor and Outdoor Air Quality for Communities Affected by Asthma in Providence, Rhode Island*

Applicant Information: Rhode Island Department of Health
Rhode Island Asthma Control Program
3 Capitol Hill, Room 408, Providence, RI 02908-5097
DUNS number: 929922664

Primary Point of Contact: Ashley Fogarty
Asthma Program Manager
(401) 222-6272
(401) 222-4415 (fax)
Ashley.Fogarty@health.ri.gov

Set-Aside: no set-aside

Brief Description of Applicant Organization: The Rhode Island Department of Health is Rhode Island's only public health department that works to prevent disease and protect and promote the health and safety of the people of Rhode Island. The Rhode Island Asthma Control Program is a federally funded state public health program with a mission to reduce the overall asthma burden and asthma health disparities in Rhode Island.

Project Partners:

- Providence Housing Authority
- Central Providence Health Equity Zone (One Neighborhood Builders)
- South Providence Health Equity Zone (Family Services of Rhode Island)
- West Elmwood Health Equity Zone (West Elmwood Housing Development Corporation)
- Health Resources in Action (HRiA)
- Hasbro Children's Hospital's Community Asthma Program
- Yale School of Public Health

Project Location: The project will take place in Providence and will focus on environmental justice communities including three Health Equity Zones (HEZs) in the city (Central Providence, South Providence, and West Elmwood HEZs) as well as 3 public housing family developments.

Air Pollutant Scope:

Particle Pollution: $PM_{2.5}$

Budget Summary:

EPA Funding Requested	Total Project Cost
$500,000.00	$500,000.00

Project Period: 11/01/22-10/31/25

Short Project Description: The Rhode Island Asthma Control Program (RIACP) is proposing to measure the impact of air quality on asthma outcomes among underserved communities living in Central, South, and West Elmwood communities within the city of Providence, Rhode Island. RIACP will conduct air quality monitoring by installing air quality sensors at public housing developments and organizations within these communities and will measure both indoor and outdoor air quality.

Section 1-Project Summary and Approach. The Rhode Island Asthma Control Program (RIACP) is an award-winning state program at the RI Department of Health (RIDOH), Division of Community Health and Equity, and recipient of the Environmental Protection Agency (EPA) 2019 National *Environmental Leadership in Asthma Management* award. In the 20 years since first receiving CDC funding in 1999, RIACP has worked with partners state-wide to build a strong foundation to improve pediatric asthma outcomes. In 2015, RIACP developed the *Comprehensive Integrated Asthma Care System* (CIACS) model to link public health and healthcare systems, such as health care, housing, education, transportation, environmental health, and community. The CIACS model provides the framework for a comprehensive public health approach to asthma control and informs RIACP's implementation of the CDC's *EXHALE* technical package. EXHALE represents a group of strategies to improve asthma control and reduce health care-related costs. One component of EXHALE is Strategy E- "Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources"[i]. This strategy is based on evidence showing strong linkages between exposure to high levels of outdoor air pollutants and an increased rate of asthma-related emergency department (ED) visits and hospitalizations[ii] . In 2021 RIACP developed a Strategic Asthma Plan (attached), which lays the groundwork for cross-collaboration and collective impact in how programs and organizations can address the burden of asthma across the state. The Plan is comprised of four focus areas: 1. Housing; 2. Healthcare systems; 3. Education Systems and Schools; and 4. Air quality and Transportation. The overall goal for RIACP's work in air quality and transportation is to ensure that all Rhode Islanders, particularly low-income communities of color, have clean and healthy indoor and outdoor air quality. The Plan drew on data showing that in 2019, 11.2% (95% Confidence Intervals [CI]: 10.0–12.4) of RI adults ages ≥18 had current asthma (n = 94,817), which is higher than for the US adult population ages ≥18 at 9.0% (95% CI: 8.8-9.2). There is an inverse relationship between current asthma prevalence and household income. [iii] Current child asthma prevalence is slightly higher in RI than nationally (RI: 8.7%; US: 7.4%) RI data, however, show striking racial/ethnic and socioeconomic disparities in children's well-being. Almost two-thirds (n=18,673) of RI's children living in poverty are concentrated in just four cities (Central Falls, Pawtucket, Providence, and Woonsocket). [iv] Black and Hispanic children are more likely than White and Asian children to live in RI's high poverty, urban cities. Children living in RI's high poverty core cities face challenges above and beyond the burdens of individual poverty; many of these burdens directly impact the development and severity of asthma, including exposure to family stress, neighborhood violence, poor housing, and living in proximity to high levels of traffic-related air pollution. Figure 1 depicts a map of the state, which shows that the greatest concentration of asthma in RI is located within the core cities.

Project Proposal. With funding from the EPA, RIACP is proposing to conduct air quality monitoring in three asthma hotspot areas of Providence shown in the map: Zip codes 02905 (South Providence); 02907 (West Elmwood); and 02909 (Central Providence). Central Providence (02909) has a median household income of $32,036 with a population comprised of 42% white and 14% Black/African American residents; South Providence (02905) has a median household income of $41,332 and is comprised of 40.3% White, 36% Hispanic, and 15% Black/African American residents; West Elmwood (02907) has a median household income of $23,225 and is comprised of 26.5% White and 23.8% Black/African American residents. Three of the state's major highway systems, Interstate 95 (I-95) and Routes 6 and 10 run directly through Providence with high truck and car volume (refer to Figures 2 and 3 in attachments). Each zip code is also a designated RI Health Equity Zone (HEZ) funded by RIDOH. A HEZ is an economically disadvantaged, geographically defined area with documented health risks. A group of volunteer stakeholders drawn from residents, local community groups, and schools, are organized as a "HEZ collaborative." Members of the collaborative work to achieve health equity by eliminating health disparities and using place-based strategies to promote healthy communities. During Year 1, RIACP will partner with the three HEZs to plan the project implementation. Within each of the 3 communities, RIACP is proposing to conduct air quality monitoring at 3 public housing developments through Providence Housing Authority (PHA). PHA provides public housing to over 12,000 residents and has 3 public housing developments located

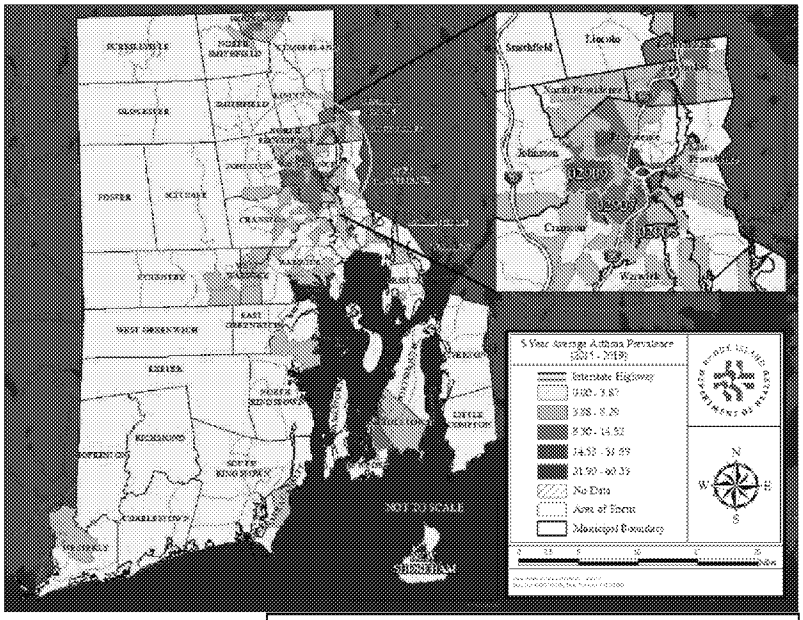

Figure 1: 5 Yr. Average Asthma Prevalence (2015-2019)

in proximity to I-95 and Routes 6 and 10. The 3 housing developments, Codding Court, Hartford Park, and Roger Williams are all family developments and are all located in asthma hotspot regions, meaning that there is a high burden of asthma (high prevalence rate of asthma-related ED visits and/or hospitalizations). RIACP proposes to partner with HousingWorks RI (HWRI) to provide education on asthma, air quality, and healthy housing to each of the three HEZs. HWRI is a clearinghouse of information about housing in the state. The organization conducts research and analyzes data to inform public policy and develops communications strategies that promote dialogue about the relationship between housing and economic development, health, and educational outcomes that impact RI's residents' well-being. During Year 1, RIACP will work closely with HWRI to plan the project, including development of educational curricula that can be provided to members of the three communities. The trainings will incorporate the most recent public health data and research to give community members an in-depth understanding of the interconnections of asthma with air quality and housing conditions. In developing the training content, HWRI will convene local experts and stakeholders to give critical feedback and ensure the trainings offer the best possible information for the selected communities for this project. The trainings will include instruction on how to identify health hazards in the home, understand the linkages between environmental conditions and health outcomes, and provide a directory of resources available to the HEZs to address air quality and housing issues.

Methods. RIACP will conduct both indoor and ambient outdoor $PM_{2.5}$ monitoring at one public housing family development and one nearby community site within each of the three HEZ communities. *PurpleAir PA-II Indoor/Outdoor $PM_{2.5}$* Sensors (PurpleAir Inc., Draper, UT) will be used to measure particle pollution and wirelessly transmit the data for analysis. Installation of the sensors will be according to the manufacturer's instructions. Initial recruitment of up to 50 eligible participating PHA households will be random via door-to-door recruitment, with additional recruitment at each location. Air sensors will be located within a bedroom within the unit of each participating households. Fifty air sensors will be placed within public housing units, 20 sensors will be installed outside of the three public housing units, 20 sensors will be installed within the 3 different HEZ community sites, and 20 air sensors will be installed outside of the 3 community sites to measure ambient outdoor air quality. As described above, each of the 50 participating households will receive an air purifier during Year 3 of the project to measure the impact of air purification on air quality within the units. Most of the community sites within each of the HEZs should already have air purifiers available as part of the state's response to COVID. Any that do not will receive a purifier during the third year. Other air purifiers will be maintained and facilities management from each of the community settings will be instructed to keep the air purifiers on during the third year. Use and maintenance of existing air purifiers at community sites during the first two years will not be encouraged or discouraged during the first two years to get an understanding of how effective these measures remain at controlling air pollution in practice years after their initial installation in September/October 2023. Results from the air quality monitoring will be widely disseminated, across community settings, including the three HEZs. The Yale School of Public Health (YSPH) will calibrate the sensors, creating a sensor health dashboard, and an interactive map depicting air quality monitoring data from the 3 communities.

Participant eligibility. RIACP will recruit up to 50 PHA households with a household member who has a documented, current asthma diagnosis by a healthcare provider. Each of the households will receive an air quality monitor at the end of Year 1 as well as an air purifier during Year 3 of the project. Using a Certified Asthma Educator (AE-C) through a contract with Hasbro Children's Hospital's Community Asthma Program, RIACP will measure the impact on asthma by providing the Asthma Control Test (ACT) to participating pediatric participants with asthma before, during, and after the sensors have been installed and after the air purifiers are installed during Year 3 of the project. The ACT is a questionnaire that allows a medical provider to determine whether a person's asthma is under control. The ACT consists of questions about a person's daytime and night-time asthma symptoms, as well as their use of asthma rescue inhaler medication such as albuterol or a nebulizer treatment. Participating families from PHA with a child with poorly controlled asthma will have the opportunity to participate in RIACP's home-based asthma interventions, including the *Home Asthma Response Program* (HARP) and the *Breathe Easy at Home Project*. Both HARP and BEAH are CDC-funded interventions designed to reduce asthma-related emergency department (ED) visits and hospitalizations for children with poorly controlled asthma. Participating community sites through the 3 HEZ collaboratives, as well as Providence Housing Authority will also be invited to participate in RIACP's Air Quality and Transportation strategic planning workgroup to help guide future initiatives related to the connection between air quality and asthma. As described above, the three areas that this project will focus are the Central, South, and West Elmwood HEZs (zip codes 02909, 02905, and 02907, respectively), and all are areas of the city with an especially high burden of asthma, also commonly referred to as "asthma hotspots" (refer to Figure 1). These communities are also socioeconomically disadvantaged and due to the locations of where the communities sit, in proximity to the major highway systems, residents are exposed to high amounts of air pollution from traffic and construction. Understanding the impact between air pollution and asthma in these low-income and low-

resourced communities will allow RIACP to guide future program planning and outreach to reduce the burden of asthma among populations that are most disproportionately affected by asthma.

Section 2-Community Involvement. This project aims to serve low-income individuals who are at greatest risk for environmental exposures to air pollution, and for developing asthma or who have current asthma and other respiratory conditions.

Partnerships. RIACP is proposing to partner with Providence Housing Authority (PHA) to work with residential staff from the three family housing developments to promote the program and recruit residents through community outreach. Additionally, the partnership with PHA will include working closely with PHA Facilities Management to install the indoor air quality sensors within participating units. RIACP has already established a close partnership with PHA, as RIACP works closely with PHA Facilities Management on various asthma initiatives, including the *Breathe Easy at Home Project*, which is a CDC-funded intervention aimed at identifying and remediating any code violations found within PHA units to reduce the risk of asthma exacerbation. Additionally, for years, PHA has supported RIACP in improving asthma outcomes by conducting outreach about asthma services as well as recruitment of PHA residents to RIACP's asthma programs. PHA has also participated as a key stakeholder on the RI Strategic Asthma Planning Committee. PHA has expertise in healthy housing issues, including indoor air quality. Through participation in the proposed project, PHA will benefit from providing indoor air quality sensors to 100 participating residents living in the three family developments, as well as receiving air purifiers at the end of the project period. As described previously, through this project, RIACP is proposing to work with the three Health Equity Zones (HEZ) in the city of Providence, including the Central, South, and West Elmwood HEZs. Each HEZ has a backbone agency that oversees HEZ activities: *One Neighborhood Builders* (Central Providence HEZ), *West Elmwood Housing Development Corporation* (West Elmwood HEZ), and *Family Service of RI* (South Providence HEZ). The partnerships with the HEZs will include working with the HEZ collaboratives for each community, which include organizations, schools, and other local partners that live and/or work in each of the communities. Working with each of the HEZ collaboratives will allow RIACP to provide informational sessions on the project, as well as work with each of the collaboratives with project planning and implementation, especially pertaining to the placement of the sensors. Additionally, RIACP proposes to partner with HousingWorks RI (HWRI) to develop and provide educational trainings by a bilingual Trainer on air quality, asthma, and healthy housing to each of the HEZ communities and PHA developments by one of HWRI's housing trainers. HWRI is a clearinghouse of information about housing in the state. The organization conducts research and analyzes data to inform public policy and develop communications strategies that promote dialogue about the relationship between housing and economic development, health, and educational outcomes that impact the wellbeing of RI's residents. Since RIACP is interested in measuring the impact of air quality on asthma outcomes, RIACP is proposing to partner with Hasbro Children's Hospital's Community Asthma Program (CAP) to utilize a Certified Asthma Educator (AE-C) to provide the Asthma Control Test (ACT) to participants before, during, and after completion of the intervention. In addition to providing the ACT to participants, the AE-C will be responsible for ensuring that each participant has a current Asthma Action Plan (AAP), which is a written plan that individuals with asthma develop with their healthcare provider. AAPs improve care coordination between healthcare providers, schools, and families. The contract with CAP will also allow the AE-C to refer participants to other asthma services, including home-based interventions such as the *Home Asthma Response Program*, *Breathe Easy at Home*, and *Cool It Off*. RIACP proposes to partner with the Yale School of Public Health (YSPH) Department of Environmental Health Sciences to expand an air monitoring network for New England. Through this partnership, YSPH will be responsible for calibration of the sensors, developing a sensor health dashboard for the sensors, as well as creating an interactive map that will visualize all the PM2.5 air sensor data, as well as showing the air quality index (AQI) and meteorological information such as wind, temperature, and humidity. Results of the project will be disseminated at community meetings held at the two HEZ organizations at the end of the project period. As part of these partnerships, RIACP will ensure that each organization is officially part of the RI Strategic Asthma Planning Stakeholder Committee. Additionally, RIACP will meet on a quarterly basis with each partner that are part of the proposed project to ensure that the program is running efficiently and to provide technical assistance.

Section 3-Environmental Justice and Underserved Communities. The proposed project will promote environmental justice as it is focused on measuring the impact of air quality on asthma outcomes from communities living in proximity to major highways. The target communities for this project are disproportionately affected by environmental exposures to air pollution from traffic and construction, as compared to other areas within Providence that are not located near major roadways. Additionally, these communities are also located in areas with a high burden of asthma and other public health concerns. The proposed project will promote health equity for underserved communities, as the project is focused on vulnerable populations, including low-income, adults and children of color with asthma. The proposed project will effectively address disproportionate health

outcomes from air pollution as the project is focused on measuring the impact of air pollution on asthma outcomes among underserved communities in Central, South, and West Providence.

Section 4-Environmental Results—Outcomes, Outputs and Performance Measures.

A. Expected Project Outputs and Outcomes. The following RIACP air quality project workplan activities support the *EPA Strategic Plan Goal 4: Ensure Clean and Healthy Air for All Communities.*

Table 1. RI Asthma Control Program's Air Quality Monitoring Project Workplan			
Overarching Goal 4: ***Ensure Clean and Healthy Air for All Communities***			
Partnerships: Providence Housing Authority (PHA), Health Equity Zones (HEZs), HousingWorks RI (HWRI), Asthma Strategic Plan Stakeholders			
Target Audience: HEZ Communities (Central Providence, South Providence, and West Elmwood Health Equity Zone Communities)			
Objective 4.1: *Improve Air Quality and Reduce Localized Pollution and Health Impacts*			
Expected Outputs/Activities	**Expected Outcomes**	**Person(s) Responsible**	**Timeline**
Establish relationships and participate in educational activities with key partners including PHA, HEZs, HWRI, and Strategic Plan Stakeholders	Short-Term Outcome: -Increase community awareness about air pollution and its impact on asthma by 100% -Increase access to information about air quality, asthma, and healthy housing by 100%	Project Manager, HWRI, HEZs, PHA, Data Manager	Year 1
RIACP will identify and recruit, up to 50 eligible participants living in 3 of PHA's family developments	Intermediate Outcome: -Invite all PHA, HEZs, and HWRI representatives to the Asthma Learning Collaborative and RI Strategic Asthma Planning Committee and achieve at least 90% attendance -Develop curricula on asthma, air quality and healthy housing that can be provided to each of the 3 HEZ collaboratives		
Work with 3 HEZs to provide informational sessions on air quality and asthma among a pediatric patient population			
Work with HWRI to develop 3 informational sessions on air quality and asthma to 3 HEZ communities			
Work with PHA and HEZs to install 40 ambient outdoor air quality sensors (20 at PHA and 20 at community sites)	Short-term Outcomes: -Identify $PM_{2.5}$ air pollution at each of the 3 PHA developments -Increase PHA residents' awareness and knowledge about $PM_{2.5}$ air pollution and its impact on asthma by 100%	Project Manager, PHA, HEZs	Year 2
Identify $PM_{2.5}$ air pollution from the outdoor air quality sensors	Short-term Outcome: - Increase community awareness of $PM_{2.5}$ air pollution and impact on asthma by 100%	Project Manager, Data Manager, YSPH	Year 2
	Intermediate Outcome: -Develop 2 state and local policies on air quality -Work with RIDOT, RIPTA and RIDEM to mitigate air pollution -Collaborate with 3 HEZs to mitigate $PM_{2.5}$ air pollution within the 3 communities -Identify the local factors that lead to increased outdoor exposure to particulates		
	Long-term Outcomes -Develop 2 state and local policies on air quality -Ensure sustainability for this project for future implementation across other communities in the state -Reduction of human exposure to air pollution -Reduction in the prevalence of asthma and/or the incidence of asthma hospital visits.		
Analyze and disseminate air quality data to each of the 3 HEZs	Short-term Outcomes: -Increase community awareness of $PM_{2.5}$ air pollution and its impact on asthma -Increased community awareness about IAQ, asthma, and healthy housing -Increased access to information and tools that increase understanding and reduction of environmental triggers that can exacerbate asthma	Project Manager, Data Manager, YSPH, HEZs	Year 3
	Intermediate Outcomes: -Community action to mitigate $PM_{2.5}$ air pollution within the 3 HEZs		
	Long-Term Outcomes: -Work with policymakers on improving air quality within the PHA and the HEZ sites		
Ensure that up to 50 program participants from PHA receive updated AAPs	Short-Term Outcomes: -Increase use of Asthma Action Plans by 100% for all program participants and community members identified as having asthma -Include exposure to $PM_{2.5}$ and other environmental triggers especially including air pollution on Asthma Action Plans by 100% -Update the RIDOH Asthma Action Plans to include a section on air quality and understanding the impact of air quality on a person's asthma	Project Manager, HEZs, PHA, AE-C	Year 3
Objective 4.2: ***Reduce Exposure to Radiation and Improve Indoor Air***			
Expected Outputs/Activities	**Expected Outcomes**	**Person(s) Responsible**	**Timeline**

Work with HEZs and PHA to provide education on air quality, asthma, and healthy housing	Short-term Outcomes: -Increase community awareness about indoor air quality, asthma, and healthy housing by 100% -Increase access to information and tools that increase the understanding and reduction of environmental triggers that can exacerbate asthma by 100%	Project Manager, HWRI, HEZs PHA	Year 1
Install 70 indoor air quality sensors (50 sensors for PHA households and 20 sensors for community sites)	Short-term Outcome: -Identify $PM_{2.5}$ indoor air pollutants from up to 70 air sensors installed	Project Manager, PHA	Year 2
Analyze and disseminate IAQ data through PHA and HEZs	Short-Term Outcomes: -Increase community awareness about IAQ, asthma and healthy housing by 100% -Increase access to information and tools that increase the understanding and reduction of environmental triggers that can exacerbate asthma by 100%	Project Manager, Data Manager, YSPH, PHA, HEZs	Years 2 and 3
	Intermediate Outcomes: -Develop 2 environmental mitigation actions from 100% of the parties responsible for $PM_{2.5}$ air pollution -Develop and implement 3 community action plans to mitigate $PM_{2.5}$ air pollution across the 3 HEZs		
	Long-Term Outcomes: -Develop and implement 2 state and local policy actions on indoor air quality, specifically pertaining to exposure to $PM_{2.5}$ air pollution		
Install air purifiers for up to 50 of PHA residents	Short-Term Outcome: -Increased community awareness about the use of air filtration to reduce exposure to $PM_{2.5}$ air pollution by 100%	Project Manager, PHA, HEZs, RIDEM	Year 3
	Long-Term Outcomes: -Work with policymakers on improving air quality and filtration within public housing and community settings		

Milestone/Activity Description:
-RIACP will partner with PHA, HEZs and HWRI to plan and implement the project to measure the impact of air quality on asthma outcomes
--Air quality monitoring data including measuring levels of $PM_{2.5}$ will be collected and analyzed by the Data Manager and YSPH
-Success will be measured during the entire project including before the sensors are installed, during the project, and after air purifiers are provided by conducting the Asthma Control Test for participants with asthma to measure the impact of air quality on asthma outcomes.

B. Performance Measures and Plan. RIACP proposes to base the performance measurement of this project on the CDC's NACP Performance Measure indicators, including: 1. Linking activities and outcomes, 2. Comprehensive service expansion in high burden areas, and 3. Use of evaluation findings. RIACP's proposed performance measures are documented activities of RIACP and the outcomes that will be achieved to establish and/or expand linkages between components of the CDC's EXHALE technical package at the organizational level. Refer to Table 2 for a complete list of performance measures and evaluation questions.

Table 2: Rhode Island's Asthma Strategic Evaluation Framework for Monitoring Air Quality in Providence

Evaluation Q1.	To what extent has the recipient strengthened and expanded programmatic infrastructure to support optimizing services and health systems?
Evaluation Q2.	To what extent has Rhode Island leveraged partnerships and policies to expand the EXHALE strategy: *Environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources* to ensure availability, efficiency, effectiveness, and healthequity?
Evaluation Q3.	To what extent has the recipient made progress toward achieving the long-term outcomes, including reduction of asthma disparities?
Evaluation Q4.	To what extent has the recipient made progress toward achieving sustainability of an air quality monitoring intervention for communities disproportionately impacted by asthma in RI?
Process Evaluation Design (Q1 to Q3)	Non-experimental (No comparison or control groups) Benefits: Will produce actionable findings regarding project outcomes, best practices, and performance improvement Limitations: Cannot control for extraneous factors that could influence outcomes, such as community contextual factors or selection bias.
Process evaluation questions (Q1- Q4)	1. Were the strategies implemented as intended, if not, what changes were made? 2. What were the challenges (problems) encountered to: strengthen and expand program infrastructure; leverage partnerships to develop; and implement environmental policies or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources; and reduce disparities? 3. Did the challenges vary based on the type of strategy or by neighborhood level? 4. What are the program's successes at the neighborhood level (Years 1 to 3 and cumulatively)?
Performance Measures	Documented changes and/or improvements in: 1. Number of partner-led (initiated) activities implemented that relate to the EXHALE component, environmental policies, or best practices to reduce asthma triggers from indoor, outdoor, and occupational sources within 3 years. 2. Number of documented improvements in the air quality or health outcomes within 3 years, especially in the 3 HEZ communities with *disproportionately* high rates of childhood asthma and asthma ED visits. 3. Number of documented interventions that reduce disparities at the population and neighborhood levels within 3 years. 4. Number participating households and community settings with improved air quality after receiving the air purification system. 5. Number of HEZ communities with improved asthma control (ED visits and hospitalizations).
Analytic approach	Qualitative: Thematic identification (Confirmation of findings across sources) Quantitative: Descriptive statistics (Counts of changes by performance indicators)
Data sources	Process: Meeting agendas & minutes, attendance logs, program documents, administrative data, interviews, focus groups, direct observation, health systems quality improvement measures (Varies by evaluation question)
Outcome (Q3)	Through conducting an analysis of 2 data sets at the zip code level (Asthma ED Visit Data and All Payer Claims Data), to what extent has there been a decrease in pediatric asthma visits?

Outcome evaluation questions	Q1. To what extent can short- intermediate- and long-term outcomes be attributed to programmatic and policy strategies? Q2. Did the magnitude of the effect differ by type of strategy and reach? Q3. What was the influence of other factors?
Analytic tools	Quantitative: Descriptive statistics, between groups t-tests; ANOVA
Data sources	RI Asthma Surveillance System: Air quality monitor sensor data (Pollitt lab at Yale), HDD; ED Visit Data; Medicaid data; BRFSS Child Asthma Call-Back Surveys; All Payer Claims Data Partners: Yale School of Public Health, Health data from managed care organizations (MCOs) accountable care organizations (ACOs), health plans
Short-term outcome	Pre- to post-intervention changes and associated costs for asthma ED visits and hospitalizations for intervention group matched to comparison group on sociodemographic characteristics and geography. Stratified analysis by primary payer (Medicaid-enrolled; private insurance)
Long-term outcomes	1. High quality integrated comprehensive asthma services 2. Sustained policy and programmatic investments to reduce exposures to indoor and outdoor pollution, and substandard housing conditions that contribute to persistent disparities in childhood asthma. 3. Reducing / preventing asthma ED visits and hospitalization among children with asthma within 5 years.
Potential audiences	HEZ collaboratives, neighborhood residents in Central, South, and West Elmwood communities; Providence Housing Authority; RIACP internal and external partners; other state asthma control programs; EPA; CDC

To understand the burden of asthma through measuring the impact of air quality, population-based asthma interventions must operate effectively across sectors and successfully reach those who bear the greatest burden of the disease. RIACP's CIACS model provides a conceptual framework to address the social, environmental, and healthcare interventions needed to improve asthma outcomes and lower costs of asthma services. A strength of this framework is that it focuses on linkages across systems to achieve reductions in asthma disparities. RIACP has extensive experience in developing and implementing Strategic and Individual Evaluation plans with stakeholder engagement is reflected in quality of the plans submitted to CDC since 1999. RIACP will integrate evaluation planning throughout the RI Strategic Asthma Plan and collaborate with an evaluation work group to implement the 2019-2024 Strategic Evaluation Plan (attached). The work group is comprised of RIACP staff and members of the RI Asthma Strategic Planning Committee. The evaluation workgroup is a learning community that works together to 1. Develop and implement individual and strategic evaluation plans; 2. Identify audiences and potential uses of evaluation findings, and 3. Seek feedback on changes for continuous program improvement. Continuous quality improvement will be guided by the Plan-Do-Check-Act (PDCA) model, a four-step model for carrying out change that will help RIACP and evaluation workgroup members to identify any problems and provide guidance on solutions. **Plan**: Development of air quality monitoring and control strategies and evaluation plans; **Do**: Implementation of air quality monitoring and control strategies and collection of process and outcome data; **Check**: review evaluation data and discuss effectiveness and efficiency of air quality monitoring and control strategies with the evaluation workgroup and project partners; **Act**: modify intervention delivery, reach, or dose as needed in collaboration with the proposed project partners and evaluation workgroup; develop additional plans as needed to create a continuous quality improvement (QI) loop. Starting points for drafting the project's evaluation plan with stakeholders include the items in Table 2, Michael Patton's utilization focus checklist[v], and process and outcome evaluation questions for measuring effectiveness and efficiency. The evaluation workgroup will support the collection of evaluation data, review findings for process and outcome evaluations, and provide feedback on success in accomplishing objectives (effectiveness) and how to improve the delivery of air quality monitoring among communities that are disproportionately affected by asthma. The evaluation framework will provide a blueprint for evaluating the proposed project across systems. RIACP will use a non-experimental evaluation design for process evaluation and a quasi-experimental design to assess the effect of state, municipal and neighborhood level strategies on asthma outcomes shown in the workplan and logic model. Data come from the RI Asthma Surveillance System. Overarching process and outcome evaluation questions and data sources are shown in Table 2. RIACP has been highly successful in bringing evaluation findings to the communities most affected by asthma. Presentations of asthma data (ED/HDD and Medicaid asthma hotspot maps) to HEZ collaboratives across the state exemplify RIACP's utilization-focused and community-based participatory approach. The HEZs will be core partners for EXHALE strategies and evaluation and the hot spot maps will galvanize diverse community groups to come together to work on RI's first Strategic Asthma Plan.

C. Timeline and Milestones. Please refer to Table 1 for a work plan of the proposed project with a list of outputs and outcomes and a timeline for completing various objectives. Below is a detailed timeline of the project for various logistical tasks:

Table 3: Timeline/Milestones of Tasks for Indoor and Outdoor Air Quality Monitoring for Communities Affected by Asthma in RI

Task	Person(s) Responsible	Timeline
Notify partners of award	PI, Project Manager (PM)	Nov 2022
Finalize project budget based on award	PI, PM, Accountant	Dec 2022
Develop contractual agreements for 7 proposed contractors	PM, Accountant	Dec 2022
Receive signed contracts for project from 7 proposed contractors	PM	Feb 2023
Convene stakeholders to form workgroup for project	PI, PM	Feb 2023
Convene stakeholders to form evaluation workgroup for project	PM, Data Manager (DM)	Mar 2023
Meet with PHA to plan installation of air quality sensors at 3 sites	PM	Mar 2023
Meet with 3 HEZs to plan the installation of air quality sensors at 3 community sites	PM	Mar 2023
Develop individual evaluation plan for air quality monitoring project	PM, DM	April 2023

Order 110 *PurpleAir* sensors	PM, Accountant	April 2023
Ship *PurpleAir* sensors to Yale School of Public Health to be calibrated	PM, YSPH	May 2023
Work with HWRI to develop educational curricula	PM, HWRI	May 2023
Prepare and develop quarterly report on project and submit to EPA	PM, DM	May 2023
Receive calibrated *PurpleAir* sensors from Yale School of Public Health	YSPH, PM	June 2023
Plan informational sessions with 3 HEZ collaboratives	PM, HEZs, HWRI	June 2023
Work with HWRI to provide 3 informational sessions at 3 HEZs	PM, HWRI	July 2023
Provide 3 informational sessions at 3 PHA developments	PM, HWRI, PHA	Aug 2023
Recruit 100 participants from 3 PHA developments	PM, PHA	Sept 2023
Order 50 *Medify* air purifiers	PM, Accountant	Sept 2023
Install 50 indoor air quality sensors within 3 PHA developments	PM, PHA	Oct 2023
Install 20 outdoor ambient air quality sensors at 3 PHA developments	PM, PHA	Oct 2023
Install 20 indoor air quality sensors at 3 HEZ community sites	PM, HEZs	Oct 2023
Install 20 outdoor ambient air quality sensors at 3 HEZ community sites	PM, HEZs	Oct 2023
Set up Air Monitor Dashboard	PM, DM, YSPH	Oct 2023
Begin tracking air quality data at PHA and 3 HEZ community sites	PM, DM, YSPH	Nov 2023
Provide ACT to 50 participants from 3 PHA developments	PM, PHA, CAP	Nov 2023
Install 50 air purifiers at 3 PHA developments	PM, PHA	Nov 2024
Measure the impact of air purification system on air quality data in dashboard	PM, YSPH	Jan 2025
Analyze data from air quality project in dashboard	PM, DM, YSPH	June 2025
Analyze findings of air quality project and develop updated GIS maps	PM, DM, YSPH	July 2025
Disseminate findings of air quality project with maps to HEZs	PM, DM	Aug 2025
Conduct evaluation of air quality monitoring project	PI, PM, DM	Sept 2025
Disseminate project evaluation findings and data to participants and HEZs	PM, DM	Oct 2025
Ensure that contracts have been paid in full	PM, Accountant	Nov 2025
Work with stakeholders to develop policies on air quality and asthma	PM, HEZs, PHA	Nov 2025

Section 5-Quality Assurance Statement. RIACP has a Data Management Plan (attached) in place that is updated annually. This living document describes the policies, procedures, and steps for collecting and reporting performance measures data required by CDC-RFA-EH19-1902, *A Comprehensive Public Health Approach to Asthma Control Through Evidence-Based Interventions*.

The YSPH team will implement quality control measures to ensure a high standard of data quality. The team will be responsible for quality assurance and quality control of air quality data acquired through this project. Data will be in the form of fine particulate matter ($PM_{2.5}$) mass concentration measured by the *Purple Air PA II* sensor. Accuracy and precision will be evaluated against the regulatory instruments. To examine regional and seasonal variation in low-cost air sensor measurements, calibration factors will be developed for individual sensors.

Low-Cost Air Sensor Calibration and Maintenance. The quality of the low-cost air sensor data remains uncertain, and performance may be impacted by both the air pollutant mixture and concentration levels, as well as the environmental conditions (*e.g.*, relative humidity, temperature, wind). The proposed air monitoring network in Providence, RI will include 'field' low-cost air sensors installed at community sites as well as a 'master' low-cost air sensor that will be placed for the duration of the proposed project at EPA monitoring station where a reference $PM_{2.5}$ is operated. A three-phase calibration protocol will be conducted for all low-cost air sensors included in proposed air monitoring network (pre-deployment, in-field, and long-term) to develop calibration factors to improve data quality. As part of the *pre-deployment* calibration, 'field' low-cost air sensors will be placed for a minimum of two weeks at the EPA monitoring station with the 'master' low-cost air sensor. This pre-deployment calibration will serve to evaluate 'field' sensor operation and development of pre-deployment $PM_{2.5}$ mass calibration factors for each 'field' sensors. A unique calibration factor will be applied to each 'field' low-cost air sensor based on the relationship identified with parallel 2-minute resolution measurements from the 'master' low-cost air sensor and the regulatory grade reference air monitor operated at the EPA monitoring station. Once 'field' sensors are installed at community sites, the operating status of these sensors will be continuously monitored in real-time through a Sensor Health Dashboard (See Data Acquisition and Management Section). We will conduct *in-field calibration*, continuously comparing the neighboring low-cost air sensors. Calibration models will be developed using past two week of collected measurements across the sensor network and applied calibration factors will be adjusted in real-time to the individual low-cost air sensors. Due to low-cost air sensor drift over time and changes in the target environments, periodic *long-term* calibration is crucial to maintain consistency among distributed sensors and ensure data quality over periods of extended low-cost air sensor use. To rigorously evaluate measurement precision and bias, one third of 'field' low-cost air sensors will be collected annual and collocated at the EPA monitoring station together with regulatory grade reference air monitor and the 'master' sensor for up to two weeks. Following this collocation, sensors will be return to the community monitoring locations. Sensors with obvious seasonal drift are prioritized for calibration. The remaining sensor locations will be selected using the pollution contour map as guide. Sensors that monitor similar pollution levels and have similar land use characteristics will be grouped together. Within each group, the sensors will be further chosen based on the ease for low-cost air sensor collection. Following protocols like the pre-

deployment calibration, updated calibration factors will be determined for each 'field' sensor. Low-cost air sensor maintenance will be performed at a minimum annually and will include cleaning internal surfaces to prevent the build-up of insects or dust, replacing degraded sensing elements, and examining site features to ensure that no significant changes to the landscape have occurred.

Data Acquisition and Management.The Purple Air low-cost air sensor will be connected to the Internet through local WIFI networks at their installed locations. Sensor data will be acquired through application programming interfaces (APIs) provided by Purple Air and then stored by the Yale team in a cloud-based centralized database platform. Acquired data will be accessed by our project team using a Sensor Health Dashboard. This interactive dashboard was built by the YSPH team and will be used to monitor the low-cost air sensor connectivity (WIFI signal strength) and performance (data capture rate and quality). This dashboard will automatically alert the Yale team and community members hosting an air sensor if their sensor goes offline and is not reporting air quality levels to the proposed air monitoring network. The sensor health dashboard further includes a data processing tool that will be used to automate measurement cleaning and calibration. Cleaned and calibrated $PM_{2.5}$ mass concentrations will be shared on a publicly accessible air network website. All acquired data will be reviewed and downloaded to a local desktop computer by the YSPH team for manual review. **Quality Control.** The Purple Air low-cost air sensor uses a Plantower PMS PM sensor to measure $PM_{2.5}$ mass concentration. Data reported by low-cost sensor channels will be reviewed on a weekly basis to identify data quality issues. Sensor data will be flagged following review on the Sensor Health Dashboard for several quality criteria, including data completeness, departure from a typical range of values or daily variation, and correlation with nearby sensors. Temperature and humidity information will be evaluated only to determine if the readings display seasonal variation. **Air Monitoring Network Website.** To increase our understanding of air quality in higher risk communities in the proposed RI communities, calibrated and cleaned $PM_{2.5}$ measurements acquired by the low-cost air sensors of will be shared on a publicly accessible website. This website will include an interactive map displaying air quality levels from the network's 110 low-cost air sensors. The map visualize real-time $PM_{2.5}$ concentrations for individual monitoring locations as well as the associated air quality index (AQI) and activity guidance. Meteorological data (wind, temperature, humidity) will also be shown and acquired from NOAA. Our website will include sensor for the proposed communities for which low-cost air sensors will be calibrated through the proposed project. Our platform has been built to be scalable and include additional air sensors as well as other available online environmental sensors.

Section 6-Programmatic Capability and Past Performance. ***Past Performance.*** RIACP has been a recipient of funding from the CDC's National Asthma Control Program (NACP) for more than 20 years. The goal of the NACP is the reduce the number of asthma-related deaths, hospitalizations, and ED visits, missed school/workdays and limitations on activity. Most recently, in 2019, RIACP received funding from the CDC to continue to provide asthma services to RI, specifically through incorporation of EXHALE and CCARE, Controlling *Childhood Asthma and Reducing Emergencies*. CCARE aims to prevent 500,000 asthma-related ED visits and hospitalizations by August 31, 2024. As previously described above, RIACP developed a framework to guide policy and programs to reduce the burden of asthma. RIACP works with a cross-sector set of strategic partners including healthcare systems, housing, schools, environmental health, and public health. Partners play a key-role in the planning, implementation, and the evaluation of RIACP's comprehensive strategies to expand the reach and high-quality asthma control services. In 2017, RIDOH requested that the RI Attorney General's Office allocate a portion of the Volkswagen (VW) Clean Air Act Civil Settlement for asthma. RIACP received approval in 2018 of $300,000 in VW Settlement funds that will be used to expand HARP statewide for Medicaid-enrolled children.

Reporting Requirements. Over the past 20 years with funding from the CDC's NACP, RIACP has met each of the CDC's reporting requirements including annual progress and continuation reports and annual performance measurement reporting. With the RI Attorney General's office for the Volkswagen Clean Air Act Settlement funding, RIACP submits progress quarterly reports to the RI Attorney General's office, which describe activities, partnerships and funds spent on the project.

Staff Expertise. RIACP is a well-established state asthma program within the Center for Preventive Services (CPS) in the Division of Community Health and Equity (Organizational Charts attached). It has 23 years of successfully implementing a comprehensive public health approach to asthma control. Over this time, RIACP: 1) developed extensive cross-sector partnerships; 2) maintained a robust asthma surveillance system; 3) conducted many high-quality evaluations including economic evaluations; 4) developed and implemented a five-year asthma state plan; 5) demonstrated leadership within RI, across New England and nationally; and 6) received national recognition through CDC's *6|18 Initiative* and EPA's 2019 *National Environmental Leadership Award in Asthma Management*. RIACP will continue to work with partners statewide to leverage RI's public health infrastructure to advance a comprehensive public health approach to asthma control to fulfill this mission. RIACP is well integrated across RIDOH's departmental structure and is an integral part of achieving RIDOH's Leading Priorities. RIDOH has established asthma as a high priority, and advocates for other state agencies and health care partners to support RIACP's evidence-based asthma interventions.

Section7-Budget.

Table 3. Budget	
Line Item & Itemized Cost	**EPA Funding**
Personnel	
Principal Investigator @ $65.324/hr x 54.6 hrs	$3,567
Project Manager @ $45.163/hr x 546.0 hrs	$24,659
Toxicologist @ $59.386/hr x 109.2 hrs	$6,485
Accountant @ $44.375/hr x218.4 hrs	$9,692
TOTAL PERSONNEL	**$44,403**
Fringe Benefits	
45.09% of personnel costs, plus actual Medical/Dental/Vision insurance costs x % FTE	$28,924
TOTAL FRINGE BENEFITS	**$28,924**
Travel	
Mileage for PD: 50 miles/month x 12 months @ $0.585/mile	$351
TOTAL TRAVEL	**$351**
Equipment	
110 *PurpleAir PA-II Indoor/Outdoor* $PM_{2.5}$ Sensors @ $260/unit	$28,600
50 Medify MA-40 Air Purifiers @ $270/unit	$13,500
TOTAL EQUIPMENT	**$42,100**
Supplies	
Outreach Materials and Supplies	$3,014
3 Laptop Computers @ $1,000/unit	$3,000
TOTAL SUPPLIES	**$6,014**
Contractual (Subawards)	
PHA Program Support/Coordination Contract	$30,000
West Elmwood HEZ Contract	$30,000
Central Providence HEZ Contract	$30,000
South Providence HEZ Contract	$30,000
Yale University Air Monitor Contract	$67,000
HousingWorks RI ($40k/yr 3 yrs)	$120,000
Hasbro Community Asthma Program Contract	$17,000
TOTAL CONTRACTUAL (SUBAWARDS)	**$324,000**
Consultants	
Data Manager @ $65/hr x 2.5hrs/wk x156 wks	$25,350
TOTAL CONSULTANTS	**$25,350**
Other	
AUDIT FEES (0.03% of federal funds)	$150
DoIT Fees ($150/month for 3 Years)	$5,400
Community Meeting Logistics	$898
TOTAL OTHER	**$6,448**
Indirect Charges	
Federal Indirect Cost Rate 20.1%	$22,410
TOTAL INDIRECT CHARGES	**$22,410**
TOTAL FUNDING	**$500,000.00**
TOTAL PROJECT COST	**$500,000.00**

Budget Detail:

Personnel: Salary and Wages **Total: $44,403**

Position Title/Name	**Annual Salary**	**% Time**	**Months**	**Amount**
Principal Investigator				
Tricia Washburn	$118,890	1%	36mths	$3,567
Oversee the project and provide support as needed to the Project Manager (PM).				
Project Manager	$82,197	10%	36 mths	$24,659
Ashley Fogarty				
Manage the project, including planning, development and implementation of the project to the three communities.				
Supervising Accountant	$80,763	4%	36 mths	$9,692
Stephanie Santiago				
Provide fiscal support for the project and work with the PM to develop and manage the overall budget and manage various contracts				
Toxicologist	$108,082	2%	36 mths	$6,485
Michael Byrns				
Provide guidance in the planning, development and implementation of the project. Interpret the data collected in terms of potential health consequences for residents. Aid in communicating the findings with stakeholders and the community.				

Fringe Benefits **Total: 28,924**

Fringe Benefits for state fiscal year 2023 include retirement plan (calculated at 29.01% of salary), retirement health insurance (calculated at 4.48%), FICA/Medicare (calculated at 7.65%), payroll assessment and year-end accrual (calculated at 3.95%), plus medical, vision, and dental insurance, which vary per employee by salary level and the health plan coverage chosen.

Position Title	Fringe	% Time	Months	Amount
CPS Lead	$62,323	1%	36 mths	$1,870
Project Manager	$58,153	10%	36 mths	$17,446
Supervising Accountant	$44,642	4%	36 mths	$5,357
Toxicologist	$70,844	2%	36 mths	$4,251

Travel **Total: $351**

In-state Travel $351

Mileage to visit PHA developments and other community locations for air quality monitors.
Estimated at 50 miles per month x 12 months x $0.585 per mile

Equipment **Total: $42,100**

Purple Air Monitors-$260/unit X 110 Units $28,600
Levoit True HEPA Air Purifiers- $270/unit X 50 units $13,500

Supplies **Total: $6,014**

Outreach Materials & Supplies-$3,014
3 Laptop Computers-$1,000 per laptop X 3 laptops (laptops for PM, DM, and HWRI)

Contractual: Total: $324,000

1. Providence Housing Authority: $30,000
Name of Contractor(s): Providence Housing Authority-
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: PHA will assist RIACP with participant recruitment and installation of air quality monitors.

2. West Elmwood Housing Development Corporation: $30,000
Name of Contractor(s): West Elmwood HEZ
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The West Elmwood HEZ will work with RIACP to assist in the planning and implementation of the project, as well as the dissemination of findings from the project to the 02907 community.

3.One Neighborhood Builders: $30,000
Name of Contractor(s): Central Providence HEZ
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The Central Providence HEZ will work with RIACP to assist in the planning and implementation of the project, as well as the dissemination of findings from the project to the 02909 community.

4. Family Services of Rhode Island: $30,000
Name of Contractor(s): South Providence HEZ
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The South Providence HEZ will work with RIACP to assist in the planning and implementation of the project, as well as the dissemination of findings from the project to the 02905 community.

5. Yale School of Public Health: $67,000
Name of Contractor(s): Krystal Pollitt
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The contract will include calibration of 110 Purple Air sensors, developing a sensor health dashboard that will include all of the Purple Air sensors, as well as development of an interactive map that will visualize sensor data, air quality, and meteorological information.

6. HousingWorks RI: $120,000
Name of Contractor(s): HousingWorks RI (HWRI)
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The contract will include funding a staff person to develop and provide educational trainings on asthma, air quality and healthy housing to communities.

7. Community Asthma Program: $17,000
Name of Contractor(s): Hasbro Children's Hospital
Method of Selection: Single Source
Period of Performance: November 1, 2022-October 31, 2025
Scope of Work: The CAP contract will involve conducting the Asthma Control Test (ACT) for participants and other asthma program referrals.

G. Consultants **Total: $25,350**

1. Knowledge Services Temporary Staffing Agency-Data Manager/Analyst $25,350

a. Name of Consultant: Mohammed Jichi
b. Organizational Affiliation: Temporary Staffing Agency

c. Nature of Services to Be Rendered: To provide data management and analysis services for the project.
d. Relevance of Services to the Project: This position will provide support to the Project Director for GIS program work.
e. Number of Days of Consultation: 2.5 hours per week at $65/hour
f. Expected Rate of Compensation: $65/hour at 2.5 hours per week (Total of 156 weeks) =$25,350
g. Basis of Selection: The RIACP Program Manager hired Mr. Jichi from Knowledge Services Temporary Agency based on qualifications including experience, education, and interest in subject matter.
h. Method of Accountability: The Data Manager/Analyst will report to the Project Director.

Other	**Total: $6,448**
Audit Fees, calculated at 0.03% of total Federal Funds	$150
DoIT Fees: IT support for program/Technology Fees ($150/month for 3 years)	$5,400
Community Meeting Logistics	$898
Total Direct Charges	**$477,590**
Indirect Costs	**$22,410**

Indirect Costs are calculated at 20.1% of Direct Costs, less Equipment and Subaward items. Please see attached federal indirect cost rate agreement for RIDOH.

TOTAL FEDERAL FUNDING REQUEST **TOTAL: $500,000**

C. Expenditure of Awarded Funds. RIACP benefits from RIDOH's robust operations and financial management infrastructure to conduct proper fund management and segregation of funds to meet all requirements for federal grants and other sources of funding. RIACP's budget supports a Supervising Accountant who is responsible for grant expenditure tracking and fiscal reporting, and who assists in the development and implementation of budgets and management of contracts. **Fiscal Management of Federal Grants.** RIDOH is experienced in managing large, complex federal grants, overseeing internal expenditures, the procurement process, and sub awards. As part of the state government, RIDOH is subject to all requirements established by RI law and practice to ensure accountability in the appropriate management of public funds. Responsibilities for fiscal management lie across the following departments and levels: The Rhode Island Department of Administration (DOA) oversees all fiscal actions of RIDOH. The RIDOH Central Management Finance and Operations Team provides general finance management and purchasing support to all RIDOH programs including the drawdown of federal funds. Finance and Operations Key Liaisons for each Division, and their staff members, administer individual Federal grants and oversee annual budget preparation and financial controls including monitoring, forecasting, analysis, and planning. Purchasing support and management are shared responsibilities in RIDOH between Central Management and the Division Key Liaison and staff. Such responsibilities include review, approval, and processing of all contracts, purchase requisitions, payments, and related transactions. In addition, DOA maintains a state-wide computerized billing system and documentation of all fiscal transactions (RIFANS).

Tracking and Monitoring Expenses. RIDOH institutes regulated procedures for tracking and monitoring expenses. Upon receipt, federal grants are assigned unique account numbers in our accounting system to track expenditures separately; RIDOH does not co-mingle federal funds. In addition to the account number, account codes are assigned to all purchases and personnel categories to define the type of purchase. This allows for purchases to be approved and expenditures to be posted under the budget categories aligned with the notice of grant awards. Federal grants are monitored both within the Division and by RIDOH 's Central Management Finance and Operations Team. At the division level, the Division Key Liaison meets monthly with each Center Chief to review spending, performance, and quality assurance issues. In addition, an Operations Liaison is assigned to every federal grant. The liaison provides support and guidance for implementing the grant under state purchasing rules and regulations, monitors and tracks grant expenditures, and assures that grant award fiscal terms and conditions are met. Monthly detailed expenditure reports are reviewed with the Program Manager to assure procurements are aligned with the timelines of the grant and expenditures are appropriate and allowable according to the grant budget. They also review the rate of spending and if needed, prepares any corrective actions. Any non-compliance issue is brought to the attention of the Division Key Liaison and if needed, the Division Director and/or the CFO. The Central Management Finance and Operations Team reviews federal grants monthly for cost and data reporting issues.

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[i] Joy Hsu, Kanta Sircar, Elizabeth Herman, Paul Garbe (Hsu, 2018, CDC).
[ii] Angelica I. Tiotiu (Tiotiu, 2020, International Journal of Environmental Research and Public Health).
[iii] 2019 Asthma Data: BRFSS Prevalence Tables and Maps. (2021, CDC).
[iv] 2021 Rhode Island Kids Count Factbook. Providence, RI: Rhode Island KIDS COUNT.
[v] Michael Patton (Patton, 2012, Sage Publications)

Michael Curtis Byrns

Ex. 6 Personal Privacy (PP)

Ex. 6 Personal Privacy (PP)

EDUCATION

Doctor of Philosophy, Environmental Health, University of Minnesota School of Public Health, Minneapolis, June 2005. GPA: 3.96

Bachelor of Science, Biology and Bachelor of Arts, Anthropology, University of Maryland, College Park, May 2000. GPA: 3.90

EXPERIENCE

Rhode Island Department of Health, Providence, RI

Principal Environmental Health Risk Assessment Toxicologist, August 2019-present
Environmental Health Risk Assessment Toxicologist, June 2018-August 2019

- Principal Investigator for the Environmental Health Risk Assessment Program
- Supervise four staff
- Provide subject expertise and participate in policy decisions for all issues related to chemical exposures and many issues related to general environmental health
- Evaluated the risks of per- and polyfluoroalkyl substances (PFAS) in drinking water and fish
- Played multiple roles in the emergency response to the COVID pandemic, including modeling the course of the pandemic, drafting RIDOH's emergency regulations for reopening, helping to get schools to reopen safely, and serving as an expert on environmental controls for infectious disease
- Collaborate closely with partners in every RIDOH Division, across Rhode Island state government (including the Governor's Office, the Attorney General's Office, DEM, DHS, RIDE, RIDOT, DBR, RIEMS, RI Commerce), other state governments, federal government (EPA, ATSDR, CDC), academic institutions, and nongovernmental partners

Department of Health Sciences, Illinois State University, Normal, IL

Associate Professor of Environmental Health, June 2017-June 2018
Assistant Professor of Environmental Health, August 2011-June 2017

- Developed and taught each of the required courses for an undergraduate Environmental Health degree
- Coordinated governmental, non-governmental, and industrial student internships in public health, occupational health, and environmental protection
- Served on multiple committees involved in the operation of the University, including as Chair of the Council for the College of Applied Science and Technology, which oversaw operations of the College
- Performed research into the occurrence of natural and pharmaceutical estrogens in constructed wetlands designed to reduce pollution from a local sewage treatment plant

Department of Pharmacology, Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA

Research Associate, September 2010-July 2011
Postdoctoral Research Fellow, August 2005-August 2010

- Developed LC-MS methods for measuring testosterone and related chemicals in tumor and blood samples from patients with advanced prostate cancer

- Developed selective inhibitors of aldo-keto reductase (AKR) 1C3 based on indomethacin and other NSAIDs
- Used LC-MS and radiometric methods to examine AKR1C3 mediated reduction of prostaglandin D_2 and steroid hormones in MCF-7 cells
- Supervised three graduate student rotation projects; trained two junior postdoctoral fellows

University of Minnesota, Department of Environmental Health Sciences and Cancer Center, Minneapolis, MN
Research Assistant January 2001-June 2005

- Characterized the products of the reaction of *cis*-2-butene-1,4-dial, a reactive metabolite of furan, with nucleosides using a variety of analytical methods
- Developed an assay to detect derivatives of these adducts in DNA treated with *cis*-2-butene-1,4-dial in vitro
- Analyzed adduct formation in DNA isolated from furan-treated rats
- Supervised two undergraduate research projects

GRANTS & FELLOWSHIPS

Byrns MC. ATSDR's Partnership to Promote Local Efforts to Reduce Environmental Exposure (APPLETREE). ATSDR/CDC. Funding period April 1, 2020 through March 31, 2023. Funded at $1.3 million.

Mulligan CC, **Byrns MC**, Bowden RM, Mitchell TA, Brennan BB. Acquisition of a High Resolution LC-MS/MS System for Research and Education. National Science Foundation. Funding period September 15, 2013 through August 31, 2016. Funded at $399,981. I contributed 15% of the total effort, equivalent to $59,997.

Jin G, **Byrns MC**, Byrns GE. Assessment Initiative for Environmental Health Program. Illinois State University internal grant. Funding period August 2014-May 2015. Funded at $2,000. I contributed about 45% of the total effort.

Byrns MC. University Research Grant, Illinois State University internal grant, Funding period July 2012-July 2013, funded at $6,500, including CAST matching funds.

Byrns MC. NICHHD Institutional NRSA Training Grant Fellowship, October 2007-September 2008.

Byrns MC. NIDDK Institutional NRSA Training Grant Fellowship, October 2005-September 2007.

Byrns MC. Doctoral Dissertation Fellowship, University of Minnesota Graduate School, September 2004-May 2005.

Byrns MC. NIEHS Institutional NRSA Training Grant Fellowship, September 2002-August 2004.

Byrns MC. The Richard G. Bond Memorial Scholarship, University of Minnesota Department of Environmental Health Sciences, August 2001-August 2002.

PEER REVIEWED PUBLICATIONS

Journal Articles

Byrns MC (2014) Regulation of progesterone signaling during pregnancy: Implications for the use of progestins for the prevention of preterm birth. J. Steroid Biochem. Mol. Biol. 139:173-81.

Liedtke AJ, Adeniji AO, Chen M, **Byrns MC**, Jin Y, Christianson DW, Marnett LJ, Penning TM (2013) Development of potent and selective indomethacin analogs for the inhibition of AKR1C3 (type 5 17β-hydroxysteroid dehydrogenase/prostaglandin F synthase) in castrate-resistant prostate cancer. J. Med Chem 56(6):2429-46.

Tamae D, **Byrns M**, Marck B, Mostaghel EA, Nelson PS, Lange P, Lin D, Taplin ME, Balk S, Ellis W, True L, Vessella R, Montgomery B, Blair IA, Penning TM (2013) Development, validation and application of a stable isotope dilution liquid chromatography electrospray ionization/selected reaction monitoring/mass spectrometry (SID-LC/ESI/SRM/MS) method for quantification of keto-androgens in human serum. J Steroid Biochem Mol Biol. 138:281-9.

Byrns MC, Mindnich R, Duan L, Penning TM (2012) Overexpression of aldo-keto reductase 1C3 (AKR1C3) in LNCaP cells diverts androgen metabolism towards testosterone resulting in resistance to the 5α-reductase inhibitor finasteride. J Steroid Biochem Mol Biol. 130 (1-2): 7-15.

Adeniji AO, Twenter BM, **Byrns MC**, Jin Y, Chen M, Winkler JD, Penning TM (2012) Development of potent and selective inhibitors of aldo-keto reductase 1C3 (type 5 17β-hydroxysteroid dehydrogenase) based on N-phenyl-aminobenzoates and their structure-activity relationships. J Med Chem. 55 (5): 2311-23.

Byrns MC (2012) Role of aldo-keto reductase enzymes in mediating the timing of parturition. Front. Pharm. 2:92.

Adeniji AO, Twenter BM, **Byrns MC**, Jin Y, Winkler JD, Penning TM (2011) Discovery of substituted 3-(phenylamino)benzoic acids as potent and selective inhibitors of type 5 17β-hydroxysteroid dehydrogenase (AKR1C3). Bioorg. & Med. Chem. Lett., 21, 1464-1468.

Byrns MC, Jin Y, Penning TM (2011). Inhibitors of type 5 17β-hydroxysteroid dehydrogenase (AKR1C3): Overview and structural insights. J. Steroid Biochem. Mol. Biol., 125, 95-104.

Byrns MC, Duan L, Lee SH, Blair IA, Penning TM (2010). Aldo-keto reductase 1C3 expression in MCF-7 cells reveals roles in steroid hormone and prostaglandin metabolism that may explain its over-expression in breast cancer. J. Steroid Biochem. Mol. Biol., 118, 177-187.

Penning TM, **Byrns MC** (2009). Steroid hormone transforming aldo-keto reductases and cancer. Ann. NY Acad. Sci., 1155, 33-42.

Byrns MC and Penning TM (2009). Type 5 17β-hydroxysteroid dehydrogenase/prostaglandin F synthase (AKR1C3): role in breast cancer and inhibition by non-steroidal anti-inflammatory drug analogs. Chem. Biol. Interact., 178, 221-227.

Byrns MC, Steckelbroeck S, Penning TM (2008). An indomethacin analogue, *N*-(4-chlorobenzoyl)-melatonin, is a selective inhibitor of aldo-keto reductase 1C3 (type 2 3α-HSD, type 5 17β-HSD, and prostaglandin F synthase), a potential target for the treatment of hormone dependent and hormone independent malignancies. Biochem. Pharmacol., 75, 484-493.

Byrns MC, Vu CC, Neidigh JW, Abad J-L, Jones RA, Peterson LA (2006). Detection of DNA adducts derived from the reactive metabolite of furan, *cis*-2-butene-1,4-dial. Chem. Res. Toxicol., 19, 414-420.

Chen B, Vu CC, **Byrns MC**, Dedon PC, Peterson LA (2006). Formation of 1,4-dioxo-2-butene-derived adducts of 2'-deoxyadenosine and 2'-deoxycytidine in oxidized DNA. Chem Res. Toxicol., 19, 982-985.

Byrns MC, Vu CC, Peterson LA (2004). The formation of substituted 1,*N*6-etheno-2'-deoxyadenosine and 1,*N*2-etheno-2'-deoxyguanosine adducts by *cis*-2-butene-1,4-dial, a reactive metabolite of furan. Chem. Res. Toxicol., 17, 1607-1613.

Byrns MC, Predecki DP, Peterson LA (2002). Characterization of nucleoside adducts of *cis*-2-butene-1,4-dial, a reactive metabolite of furan. Chem. Res. Toxicol., 15, 373-379.

Book Chapters

Byrns MC, Penning TM (2017). Environmental toxicology: heavy metals and carcinogens. In *Goodman and Gilman's The Pharmacological Basis of Therapeutics, 13th edition*, edited by Laurence L. Brunton, Randa Hilal-Dandan, and Bjorn C. Knollman. McGraw-Hill, New York, NY.

Byrns MC, Penning TM (2011). Environmental toxicology: heavy metals and carcinogens. In *Goodman and Gilman's The Pharmacological Basis of Therapeutics, 12th edition*, edited by Laurence L. Brunton. McGraw-Hill, New York, NY.

Byrns MC, Penning TM (2007). Selective inhibitors of AKR1C3 as anti-proliferative agents. In *Enzymology and Molecular Biology of Carbonyl Metabolism – 13*, edited by Henry Weiner, Edmund Maser, Ronald Lindahl, and Bryce Platt. Purdue University Press, West Lafayette, IN.

TEACHING EXPERIENCE

Environmental Toxicology (HSC249). One section per year in Fall 2011-12, Spring 2013-18. Illinois State University

Environmental Health Decisions Processes (HSC355). One section each in Fall 2013-17, Spring 2016-18. Illinois State University

Environmental Health in the 21st Century (HSC156). One section in Fall 2011-13 & 2016-17 and Spring 2013-16, two sections in Spring 2012 and Fall 2014-15. Illinois State University

Environmental Health Practice (HSC145). One section each semester from Fall 2016 through Spring 2018. Illinois State University

Epidemiology (HSC258). Spring 2014. Illinois State University

Guest lecturer in Molecular Toxicology (PHRM590) and Fundamentals of Pharmacology (PHRM623), seven total classes, University of Pennsylvania Perelman School of Medicine 2006-2009.

CERTIFICATIONS

IS-100 Introduction to the Incident Command System (ICS), FEMA
IS-200 Basic Incident Command System for Initial Response, FEMA
ICS-300 Intermediate ICS for Expanding Response, FEMA
ICS-400 Advanced ICS, FEMA
IS-700 An Introduction to the National Incident Management System (NIMS), FEMA
IS-800 An Introduction to the National Response Framework, FEMA

TRICIA A. WASHBURN

Ex. 6 Personal Privacy (PP)

EDUCATION:

1997 ***RHODE ISLAND COLLEGE***
BACHELOR OF SCIENCE/HEALTH EDUCATION
Concentration in Community Health

PROFESSIONAL EXPERIENCE:

September 2020 *Rhode Island Department of Health, Providence, Rhode Island*
(Interdepartmental Project Manager)
CHIEF, CENTER FOR PREVENTIVE SERVICES
Oversee multiple federal and state human service programs – Immunization, Oral Health, Asthma Control, Adolescent, School and Reproductive Health; working with state agencies and/or organizations to strengthen cross-system collaboration and implement integrated services organization and delivery policies; responsible for project development; perform research, program evaluation, fiscal and policy analysis on various issues affecting programs; serve in a highly responsible communication capacity representing a number of state programs in their contact with state, local, public and media officials;

2013 – 2020 *Rhode Island Department of Health, Providence, Rhode Island*
(Chief, Office of Health Promotion)
CHIEF, OFFICE OF IMMUNIZATION
Manage all aspects of the Immunization Program's within the Office including program and policy planning, development, implementation and evaluation; Responsible for preparation of grant applications, budget development, projections, and fiscal monitoring; Implementation of evidenced based strategies to meet program goals and objectives; Facilitate program collaboration and service integration with internal and external partners; Oversee statistical analysis of surveillance data, related reporting and dissemination of data; Supervise immunization program staff and work of program support staff; Represent RI at local, regional and national meetings and present findings to community and professional audiences.
Serve as Deputy Team Lead for the Center for Preventive Services.

2010 – 2013 *Rhode Island Department of Health, Providence, Rhode Island*
(Senior Public Health Promotion Specialist)
FAMILY PLANNING PROGRAM MANAGER
Manage implementation of the statewide Family Planning Title X programs in conjunction with federal Title X policies and requirements. Supervise, instruct and review the work of staff members. Over see all program planning, development, implementation and evaluation. Implement strategies to meet program goals, objectives, and improve outcomes. Provide coordination to community agencies pertaining to clinical and administrative requirements, fiscal issues, and quality improvement. Write and submit grant applications and reports. Develop and manage Title X federal budgets and reports. Oversee contract procurement, monitor contract budgets and purchases. Oversee all quality assurance and quality improvement activities. Serve as an active member of all regional executive level meetings. Work collectively across programs, divisions and sectors to improve preconception health and birth outcomes. Part of leadership team for the Rhode Island Task Force on Premature Birth.

2008 – 2010 *Rhode Island Department of Health, Providence, Rhode Island*
(Principal Community Development Training Specialist)
FAMILY PLANNING PROGRAM COORDINATOR

Perform advanced technical work in implementing the statewide federal Family Planning Title X Program. Assist in the instruction, supervision and review of staff members, develop and monitor program objectives and outcomes, provide assistance and coordination to community agencies pertaining to clinical and administrative requirements, fiscal issues, and quality improvement. Prepare grant applications as needed. Assist in the development of the Title X federal budget, monitor and manage the federal budget. Manage contract procurement, monitor contract budgets and invoices.

RYAN WHITE PROGRAM, PROVISION OF CARE OPERATIONS MANAGER
Monitor and manage the Ryan White federal budget and all state and federal accounts related to the program, provide assistance in the development of the Ryan White budget, manage contract procurement, monitor contract budgets/invoicing and work as liaison to community agencies.

2005 – 2008 — *Rhode Island Department of Health, Providence, Rhode Island*
(Principal Community Development Training Specialist)
YOUTH INITIATIVES ASSISTANT PROGRAM MANAGER
Provide technical, evaluative and liaison monitoring and assistance to local agencies involving the implementation of statewide public health programs (Men2B Program and other adolescent initiatives) to reduce mortality and morbidity from major threats to child and adolescent health.

2000-2005 — ***RHODE ISLAND DEPARTMENT OF HEALTH,*** *Providence, Rhode Island*
COMMUNITY PROGRAM LIAISON
Provide technical and evaluative work involving the implementation of a statewide public health program (school-based health centers and other adolescent and school health programs) to reduce mortality and morbidity from major threats to adolescent health.

1998-1999 — ***PRO HEALTH, INC.*** *Providence, Rhode Island*
FITNESS SPECIALIST/ASSISTANT MANAGER

1997-1998 — ***BLUE CROSS BLUE SHIELD OF RHODE ISLAND,*** *Providence, Rhode Island*
HEALTH EDUCATOR

CONTINUING EDUCATION:

2014 — *Rhode Island Department of Administration, Managing Performance Expectations, Training for Managers and Supervisors - Turning Managerial Challenges into Positive Results.*

2007 — *Rhode Island Department of Administration, Office for Training and Development - Professional Communications*

2006 — *FEMA Emergency Management Institute. National Incident Management System (NIMS): An Introduction (IS-00700).*

2006 — *FEMA Emergency Management Institute. ICS for Single Resources and Initial Action Incidents Course (IS-00200).*

2006 — *Management Concepts. Sub-Awarding for Pass-Through Entities: Designing Accountable Programs, Selecting Sub-Recipients, & Monitoring Sub-Grants Course.*

PROFESSIONAL MEMBERSHIPS:

Member – Association of Immunization Managers
Past Member – National Family Planning & Reproductive Health Association

Ashley Fogarty, MPH
Providence, RI Ex. 6 Personal Privacy (PP)

SUMMARY

Professional with a Master's Degree in Public Health and 10 years of experience offering a unique combination of management, critical thinking, and commitment to overall health of the community.

- Extensive experience in program management including finance, projects, grant writing, program evaluation, and event planning.
- Works within the Rhode Island Department of Health's Division of Community Health and Equity in the Rhode Island Asthma Control Program.
- Works in community settings to provide health promotion and disease/injury prevention to protect the community from environmental health hazards
- Experience in project management while completing research and data analysis
- Serves on the RI Alliance for Healthy Housing on behalf of the RI Asthma Control Program
- Proficient in computer skills including statistical analysis software programs
- Exceptional interpersonal and organizational skills
- Excellent oral and written communication skills

PROFESSIONAL EXPERIENCE

The Rhode Island Department of Health
Asthma Program Manager, 2020-Present

- Oversee the Rhode Island Asthma Control Program
- Responsible for program decision-making and high-level partnerships and policy discussions with federal and state agencies, municipalities, and healthcare institutions
- Oversee overall program development and leadership for asthma in the State of Rhode Island
- Provide expertise in environmental health policy and strategic partnerships
- Develop, implement, and disseminate statewide strategic plans
- Write grant applications and other funding award applications
- Compose annual progress reports and performance measures for the Centers of Disease Control and Prevention
- Monitor and evaluate various public health interventions including the Home Asthma Response Program, Breathe Easy at Home Project, Project CASE, and Cool It Off.
- Develop partnerships with external partners and compose contractual agreements
- Develop and monitor program budgets
- Provide local, statewide, and national presentations on behalf of the RI Asthma Control Program

Programming Services Officer, 2016-2020

- Assist the Program Manager with program management and coordination of initiatives of the Rhode Island Asthma Control Program
- Compose annual progress reports and performance measures for the Centers of Disease Control and Prevention
- Monitor the asthma home visiting initiative, *HARP* REDCap database
- Coordinate the RI Asthma Control's Breathe Easy at Home Project, involving direct communication with city code enforcement, health care providers, and members of the community
- Develop annual contracts for partners to provide RI Asthma Control Program initiatives

Ashley Fogarty, MPH
Providence, RI Ex. 6 Personal Privacy (PP)

- Participate on the Comprehensive Integrated Asthma Care System committee with members from RIDOH, Hasbro Children's Hospital, and St. Joseph Health Center
- Write grant applications and other award applications
- Conduct program evaluation of the Breathe Easy at Home Project and other RI Asthma Control Program initiatives
- Provide presentations on behalf of the RI Asthma Control Program on asthma and air quality to community partners, including providers, community health care workers, members of the community, public housing, and city code enforcement
- Attend national Indoor Air Quality Officials Workshops in Washington, DC.
- Coordinate the annual Rhode Island Asthma Educator Institute with the RI Association for Certified Asthma Educators and the American Lung Association.

The Miriam Hospital
Program Manager, 2015-2016

- Plan and organize conferences and continuing medical education events at The Miriam Hospital
- Monitor budgets and prepare budget justifications and projections
- Compose monthly progress reports
- Monitor the Rhode Island Local Performance Site (RI-LPS) and its training progress through the AIDS Education Training Center (AETC) Training Levels and Evaluation Approaches
- Collaborate with other public health and medical professionals from surrounding New England states as part of the New England AIDS Education Training Center (NEAETC)
- Coordinate the Clinical AIDS Task Force Series (CATF) held at The Miriam Hospital.
- Manage continuing education credits for physicians, nurses, social workers and other public health professionals by collaborating with the Brown University Office of Continuing Medical Education and the National Association of Social Workers (NASW)

The Miriam Hospital
Senior Research Assistant, 2015-2016

- Assist Principal Investigators with research projects
- Attend research meetings with co-investigators and clinical staff
- Conduct statistical data analysis
- Compose literature reviews of research publications
- Computer programs used include Microsoft Office, SPSS, REDCap, UciNet, and NetDraw.

Naugatuck Valley Health Department, Naugatuck, CT
Graduate Student Intern, 2014

- Collaborated with Maternal Health Coalition to improve birth outcomes, access to care and sexually transmitted infections in the Naugatuck Valley.
- Conducted research on syphilis, chlamydia and gonorrhea and their effects on pregnant women and infants.
- Worked with the Connecticut Department of Public Health to investigate current data on sexually transmitted infections in the state of Connecticut.
- Analyzed treatment records of sexually transmitted infections to identify the geographic location of clinics where patients were receiving health services.
- Measured the distance from each town in the Valley (Naugatuck, Shelton, Seymour, Ansonia and Beacon Falls) to the most common treatment facilities visited.

STEPHANIE SANTIAGO

Ex. 6 Personal Privacy (PP)

OBJECTIVE

To obtain a full-time position as a supervising accountant where I can utilize my analytical and accounting skills in the financial department within an organization.

EXPERIENCE

Rhode Island Department of Health, Providence, RI
Supervising Accountant (2019-present)

- Managed federal grant awards issued by the various government agencies such as Centers for Disease Control & Prevention, Health Resources & Services Administration, Substance Abuse & Mental Health Services Administration, Administration for Community Living, & The Office of the Secretary
- Developed and analyzed federal grant budgets in collaboration with Finance/Administration teams to ensure competitive and non-competitive applications are submitted on time for funding
- Submitted and prepared all financial reports/documents required by each of the government agencies on a periodic basis
- Ensured the accuracy of monthly grant reporting

Rhode Island Department of Environmental Management, Providence, RI
Senior Accountant (2016-2019)

- Managed federal grant awards issued by the Environmental Protection Agency
- Prepared periodic financial statements and quarterly reports reflecting expenditures
- Formulated indirect cost proposals, reviewed payment requests, and processed drawdowns on grants
- Provided budgetary and cost control expertise

Eleanor Slater Hospital, Cranston, RI
Accountant (2016)

- Acted as the custodian of funds for a large number of patients and maintained a complete set of accounts on operations
- Analyzed and prepared reports for direct deposits, personal needs, and board and care costs for patients
- Audited and certified relief expenditures made by cities and towns within a given area of the state

Pawtucket Credit Union, Pawtucket, RI
Staff Accountant/Teller Operations Specialists II (2008-2016)

- Performed regular account analysis and reconciliation of various accounts
- Maintained accounts payable records by reviewing all invoices for appropriate documentation
- Recorded investment purchases, maturities, and interest payments
- Provided professional and knowledgeable assistance to members on various products and services
- Competed and processed check disbursements, loan payments, and credit card payments

Rhode Island College, Providence, RI (2013-2016)
B.S. in Accounting

Community College of Rhode Island, Lincoln, RI (2007-2013)
A.S. in General Studies

COMPUTER SKILLS

Microsoft Word, Advanced Excel, PowerPoint

REFERENCES

References available upon request.

Manifest for Grant Application # GRANT13580282

Grant Application XML file (total 1):

1. GrantApplication.xml. (size 28217 bytes)

Forms Included in Zip File(total 6):

1. Form ProjectNarrativeAttachments_1_2-V1.2.pdf (size 16009 bytes)

2. Form SF424_3_0-V3.0.pdf (size 24199 bytes)

3. Form SF424A-V1.0.pdf (size 22945 bytes)

4. Form EPA4700_4_3_0-V3.0.pdf (size 22911 bytes)

5. Form OtherNarrativeAttachments_1_2-V1.2.pdf (size 15904 bytes)

6. Form EPA_KeyContacts_2_0-V2.0.pdf (size 37280 bytes)

Attachments Included in Zip File (total 11):

1. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1244-AsthmaEPA_Grant_Fig3.pdf application/pdf (size 504859 bytes)

2. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1242-AsthmaEPA_Grant_Fig1.pdf application/pdf (size 629183 bytes)

3. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1243-AsthmaEPA_Grant_Fig2.pdf application/pdf (size 166306 bytes)

4. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1234-Asthma Strategic Plan RI.pdf application/pdf (size 4590072 bytes)

5. ProjectNarrativeAttachments_1_2 ProjectNarrativeAttachments_1_2-Attachments-1241-Project Narrative Final.pdf application/pdf (size 554696 bytes)

6. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1240-RIDOH SFY22 Indirect Cost Rate.pdf application/pdf (size 72261 bytes)

7. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1239-Organizational Chart.pdf application/pdf (size 266339 bytes)

8. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1238-Resumes.pdf application/pdf (size 402414 bytes)

9. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1237-Data Management Plan RI.pdf application/pdf (size 424952 bytes)

10. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1236-Asthma Strategic Evaluation Plan RI.pdf application/pdf (size 381330 bytes)

11. OtherNarrativeAttachments_1_2 OtherNarrativeAttachments_1_2-Attachments-1235-Letters of Support.pdf application/pdf (size 1944380 bytes)